Microsoft® Word

Printer Information for Microsoft Word

Microsoft®

Printer Information for Microsoft® Word

Word Processing Program

Version 5.0

for IBM® Personal Computers and Compatibles and for the IBM Personal System/2® Series

Microsoft Corporation

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Document No. 990430010-500-R02-1088

Contents

About this Manual vii

1 Using Word with Printers 1
- Overview 2
- Preparing to Print 3
  - Parallel and Serial Interfaces 4
- Printing 6
- Displayed Text and Printed Text 8
- Changing Printers 9
- Using Unsupported Printers 10

2 Supported Printers 11
- Overview 12
- About the Supported Printer Listings 12
- Pitch and Points 17
- Supplemental Printer Disks 18
- Supported Printers 20
  - ALPS ALQ 200/300 20
  - ALPS P2000 21
  - Anadex DP-6500 22
  - Anadex DP-9625 23
  - Anadex DP-9725/Printronix DP-9725 Color Scribe 24
  - Anadex WP-6000 25
  - Apple LaserWriter Series 26
  - AST TurboLaser 29
  - AST TurboLaser/PS 30
  - Brother BP 5420AI 30
  - Brother HR-15/25/35 30
  - Brother M-1509/1709 31
  - Brother M-1724L 32
  - Brother SP-1000 33
  - Brother Twinriter 5 33
  - Businessland 45LQ 35
  - C.Itoh C-310/15 XP and CXP 36
  - C.Itoh C-715A Reliant 37
  - C.Itoh CIE LIPS 10 Plus 38
  - C.Itoh F10-40/55 40
  - C.Itoh Jet-Setter 41
  - C.Itoh ProWriter 815 Supra 43
  - C.Itoh ProWriter Junior 44
  - C.Itoh Starwriter FP-1500-45P 45
  - Canon BJ-130 Bubble Jet 46
  - Canon LBP-8A1/A2 47
  - Canon LBP-8II, LBP-8IIR, and LBP-8IIT 48
  - Citizen MSP-10/15 49
  - Citizen MSP-50/55 50
  - Cordata LP300/Corona LP300 51

DEC LN03 Laser Printer 53
Diablo 620 54
Diablo 630/630 API/630 ECS 55
Diablo P32 56
Epson EX-800/1000 57
Epson FX Series 58
Epson GQ-3500 60
Epson JX-80 61
Epson LQ-500 62
Epson LQ-800/1000 64
Epson LQ-850/1050 65
Epson LQ-1500 66
Epson LQ-2500 67
Epson LX-80/86 68
Epson LX-800 69
Epson MX-80/100 and MX-80/100 with Graftrax/Graftrax Plus 70
Epson RX-80/100 71
Epson SQ-2000 72
Fujitsu DL2400 72
Fujitsu DL2600/5600 74
Fujitsu DX-2300/2400 75
Hewlett-Packard 2934A 76
Hewlett-Packard DeskJet 2276A 77
Hewlett-Packard LaserJet Series 79
Hewlett-Packard PaintJet 92
Hewlett-Packard QuietJet Plus 93
Hewlett-Packard ThinkJet 94
IBM Color Inkjet 94
IBM Graphics Printer 95
IBM Pageprinter (3812) 96
IBM Personal Pageprinter 4216 98
IBM Proprinter Series 99
IBM Quickwriter 101
IBM Quietwriter I & II 103
IBM Quietwriter III 104
IBM Wheel Printer 105
Kyocera F-1010 106
Mannesmann Tally 1x 107
Mannesmann Tally 80 108
Mannesmann Tally 330 109
Mannesmann Tally 910 110
NCR-6416 Laser Printer 113
NEC LC860+ 114
NEC P6/P7 and NEC P5 XL/P9 XL 116
NEC P560/P565 117
NEC Pinwriter P2/P3 118
NEC Pinwriter P2200 119
NEC Silentwriter 890 119
NEC Spinwriter 3550 120

NEC Spinwriter 7710 121
Okidata 192 122
Okidata 292/293 123
Okidata Laserline 6/8 124
Okidata Microline 92/93 125
Okidata Microline 393/393C 126
Okidata Pacemark 2410 127
Panasonic KX-1092i/1091i and KX-P1080i/P1592 127
Panasonic KX-P1524 129
Panasonic KX-P4450 Laser 129
PostScript Printers 130
QMS KISS/KISS Plus 132
QMS PS 800/800 PS II 135
QMS Smartwriter 135
Quadram QuadLaser 136
Qume Sprint 11 137
Ricoh LP4080R 138
Ricoh PC Laser 6000 139
Seikosha BPI-5420AI 140
Seikosha SP-1000 141
Silver Reed Exp 400 142
Star Micronics Delta 143
Star Micronics NB 24-15 144
Star Micronics NX-10/15 145
Star Micronics Radix 146
Tandy DMP 106 147
Tandy DMP 130 148
Tandy DMP 200 149
Tandy DMP 400 150
Tandy DMP 430 150
Tandy DMP 2100 151
Tandy DMP 2100P 152
Tandy DMP 2110/2120 153
Tandy DMP 2200 154
Tandy DW II/DW IIB 155
Tandy DWP 220/230 156
Tandy DWP 510/520 157
Tandy LP 1000 158
Texas Instruments 850 159
Texas Instruments 855/857 160
Texas Instruments Omnilaser1 and
Omnilaser 2108/2115 162
Toshiba P321SL/341SL 162
Toshiba P351/P351C 163
Toshiba P351 SX/P351 SXC 164
Toshiba P1340 165
Toshiba P1350/P1351 166
Toshiba PageLaser 166
Xerox 2700 Laser Printer 168
Xerox 4020 169
Xerox 4045 170

3 Tips and Troubleshooting 173
Tips 174
Troubleshooting 179
If Your Printer Doesn't Print at All 179
If You See a Message 180
If the Page Prints but is Formatted Incorrectly 182
If Printer Output is Garbled 182
If the Printer Loses Text 183
If Your Printer Runs Out of Memory While Printing Graphics 184
If You Still Can't Print 184
Printing Questions 185

4 Downloading Fonts 187
Overview 188
Preparing to Download 188
Downloading Procedure 190
Downloading PostScript Fonts 191
Downloading to a LaserJet Printer 192
Troubleshooting 193

5 Using the MergePRD Program 195
Overview 196
When to Use MergePRD 196
When Not to Use MergePRD 197
Using MergePRD 197
MergePRD Reference 205

6 Using the MakePRD Program 209
Overview 210
About MakePRD 210
Running MakePRD 211
Text File Format 212
Entering Control Codes 213
The Header 214
The Model Block 216
Font Description 222
Character Width Table 226
Character Translation Table 227
Printer Control Sequence Description 229
Graphics Device Description 235
Strings 241
Sample PRD Text File 244
Common PRD File Modifications 249
Font Assignment Table 251
MakePRD Questions 253

Appendix A Printing Special Characters 255

Appendix B Using the MSPRINT File Format 259

Appendix C DAT File Format Specifications 261

Terms 263

Index 269

About this Manual

This manual lists the printers that Word supports, along with information on their capabilities. The manual also provides information on downloading fonts, troubleshooting, and Word's printer driver utilities, MergePRD and MakePRD.

Here's a chapter-by-chapter introduction:

Chapter 1, "Using Word with Printers," provides a basic overview of how Word works with printers and an explanation of how the computer and printer communicate. Other topics covered include printing procedures, differences between displayed text and printed text, how to change from one printer to another, and what to do if your printer is not supported.

Chapter 2, "Supported Printers," lists the printers that Word supports and describes their capabilities and any special requirements for printing with Word.

Chapter 3, "Tips and Troubleshooting," provides printing tips and gives procedures for dealing with various printing problems.

Chapter 4, "Downloading Fonts," tells how to set up your downloadable font files and PRD files so that downloading will work properly. Word automatically downloads fonts for you if the PRD file you are using supports those fonts.

Chapter 5, "Using the MergePRD Program," explains how to use Word's MergePRD program to customize PRD files for your particular needs. You can combine cartridge fonts, downloadable fonts, and built-in fonts into a single PRD file. MergePRD also lets you add support for downloadable PostScript fonts and make other modifications.

Chapter 6, "Using the MakePRD Program," explains how advanced Word users can modify or create PRD files. An example of a PRD file is included.

Appendix A, "Printing Special Characters," explains how Word treats special characters. Because different manufacturers use different character sets, printing special characters is sometimes tricky.

Appendix B, "Using the MSPRINT File Format," describes how to use the MSPRINT file format to create printer drivers for typesetting systems.

Appendix C, "DAT File Format Specifications," provides the technical specifications for DAT file formats. Word uses the information in DAT files for downloading.

The Terms section contains definitions of special terms used in this manual.

1 Using Word with Printers

Overview

You can think of Word as a very sophisticated instrument for controlling your printer. You tell Word how your document should look, using Word's formatting commands, and Word tells the printer how to print it.

Word uses a printer driver, or PRD, file to communicate with the printer. The PRD file contains information that tells Word what the printer can do and how to instruct the printer to do it.

Since you control your printer directly from Word, you can confuse the printer if you try to control it in other ways. Specifically:

- You don't have to use the printer's control panel for formatting.
- You don't have to embed printer control codes in your document.

If you do use the printer's control panel, Word will probably override the settings you select. In some cases, however, changing the printer's settings may cause your document to print incorrectly.

With a few printers, you may need to use the control panel for special functions. These exceptions are noted in the individual printer listings in Chapter 2, "Supported Printers."

Dot matrix and daisywheel printers

When Word sends a document to print, it expects dot matrix printers to be in draft mode and to be set to print 10 characters per inch. Draft mode is the printer's default mode — the setting the printer has when you turn it on. Every dot matrix printer has a draft print mode, although not every manufacturer calls it that. Draft mode is simply a name given to a printer's unmodified, normal type.

In addition to draft mode, dot matrix printers use several other print modes to control type style and size. In Word, these print modes are called fonts or font sizes depending on how the print mode affects the type. Letter-quality or near-letter-quality print modes, for example, are called fonts, and are chosen in the "font name" field of the Format Character command. Other print modes, such as "condensed" or "enlarged" are considered font sizes and are chosen in the "font size" field of the Format Character command.

Dot matrix and daisywheel printers usually describe type size in terms of characters per inch (cpi), also called "pitch." Ten-cpi type is the same as type that prints at 10 pitch and vice versa. The default type size for most printers is 10 cpi.

Word uses points, a very precise typographical measurement, to describe type size. If you press F1 in the "font size" field of the Format Character command, the sizes for each font are listed in points. A standard, Pica-size type is 12 points, while Elite type is 10 points. If you're used to thinking in terms of pitch or characters per inch, the introduction to Chapter 2, "Supported Printers," provides a table that converts pitch to points.

Many dot matrix printers offer optional sheet feeders as an alternative to using continuous fan-fold paper. Word supports sheet feeders offered by the printer manufacturer and provides a utility program, MergePRD, that lets you add support for sheet feeders produced by other manufacturers.

Laser printers

As with dot matrix and other printers, you don't need to use laser printers' control panels or escape codes to take advantage of their formatting capabilities. You format your document with Word, and Word uses the information in its PRD file to give the printer appropriate instructions.

Laser printers handle type styles in much the same way Word does. Laser printers generally call type styles fonts and measure their different sizes in units of points, as Word does. Some laser printers offer scaleable fonts — fonts that can be scaled to different sizes within a certain range. On PostScript printers, for example, Word supports any even font size between 2 and 126 points.

Word also supports downloadable fonts for many laser printers. You can format your document with the downloadable fonts you want to use and Word automatically downloads them. See Chapter 4, "Downloading Fonts," for more information.

Preparing to Print

Your printer manual should provide information on installing your printer and connecting it to the computer. This section may help to give you a better understanding of how the computer communicates with your printer, which can be useful for troubleshooting. This information is especially useful if your printer uses a serial interface, since a serial interface is more complicated and requires the DOS or OS/2 MODE command to control "handshaking" (see "Parallel and Serial Interfaces" later in this chapter).

Start by trying to print something from the operating system level to see if the printer is working and properly connected. If it is, you can skip the rest of this section.

- At the system prompt, type:

  DIR > *port*

  This command prints a listing of the files in your file directory. If your printer has a parallel connection, *port* should be LPT1:, LPT2:, or LPT3:; if the connection is serial, *port* should be COM1: or COM2:. Remember to include the colon at the end.

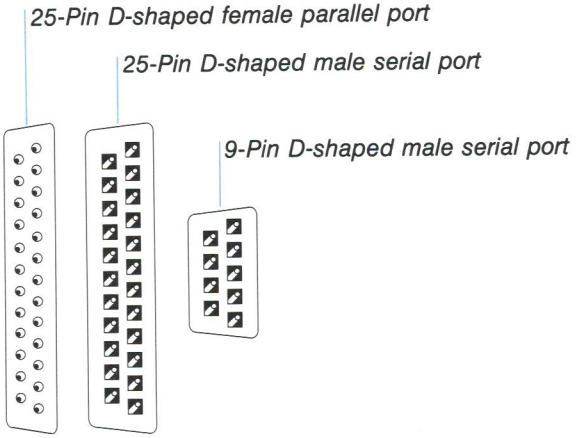
Note This procedure won't work with a PostScript printer. Everything sent to a PostScript printer must be encoded in the PostScript language.

Parallel and Serial Interfaces

"Interface" is a term that describes the way a computer receives and sends information. The printer interface includes the connecting cable, the sockets you plug the cable into, and the way the computer sends information to the printer.

A printer may be connected to the computer through either a serial or parallel interface. In either case, you need to make sure you are using the correct printer cable and are connected to the correct port.

The following figure illustrates the differences between ports on the back of the computer.



Note Many computers use a male 25-pin parallel port that may be confused with a serial port. Check your computer manual if you're not sure whether a port is parallel or serial.

Parallel Interface

If your printer uses a parallel interface, make sure you are connected to the correct port and that you are using a parallel cable.

Serial Interface

Here are the elements of the serial interface to check:

- *Cable* Make sure you have the correct cable for your printer. If your printer doesn't come with its own cable, a generic RS232 cable may work. However, you may need to purchase a cable made especially for your printer. Many serial printers require a "null modem" cable that reverses certain lines. If you're not sure which kind of cable your printer requires, ask your printer dealer or check your printer manual.

- *Port* Make sure the cable is connected to a serial port on the back of the computer.
- *Handshaking* A "handshake" is an agreement between two devices, the computer and printer in this case, about how information is to be sent between them.

  If you have a serial printer, you need to use the operating system MODE command to set the handshaking parameters your printer expects. Your printer manual should tell you which parameters to use.

  For example, to set baud rate to 9600, no parity, 8 data bits, and 1 stop bit, at the operating system prompt type:

  mode com1:9600,n,8,1,p

  You may want to create an AUTOEXEC.BAT file to do this every time you start your computer, or add this information to the existing AUTOEXEC.BAT file. For more information, see your operating system manual.

  If you run Word in OS/2 compatibility mode, you need to run a utility program, Setcom40. At the command line, type *setcom40 comx:=on*, where *comx* is the serial port (COM1: or COM2:) your printer is connected to. You can insert this command in an AUTOEXEC.BAT file.

  One aspect of handshaking not covered by the MODE command is the "protocol," which tells the computer when to start and stop sending information.

  Most printers can use only one protocol, so generally you don't need to worry about your printer's protocol setting. But if you have a serial printer that can use more than one protocol, make sure the protocol setting matches the setting Word expects.

  Most serial printers use the XON/XOFF protocol or one called ETX/ACK. Word expects all printers except Diablos and compatibles to use XON/XOFF. Diablo printers use ETX/ACK.

Printer Configuration Switches and Mode Settings

Many printers have a set of configuration or "dip" switches. Generally, Word expects these switches to be set just as they were when the printer arrived from the factory — in the "factory default" settings (if a printer is an exception to this rule, it's noted in the entry for that printer in Chapter 2, "Supported Printers").

Many printers have switches for doing automatic line feeds when receiving a carriage return. These switches should be set to do a carriage return only, which is normally the factory default setting.

Mode Settings

Some printers have switches or control panels that enable you to set the printer for different modes, such as draft, letter quality, or compressed text. As noted above, you should not use these controls with Word. If you do use them, you may cause your document to print incorrectly. Word almost always expects a printer to be in draft mode, printing 10 characters per inch. Exceptions to this rule are noted in individual printer entries in Chapter 2, "Supported Printers."

Printing

Once your printer is properly connected and you have installed an appropriate PRD file, you are ready to print.

1. Choose **P**rint **O**ptions.

   Here's a checklist of all the fields in the Print Options command. You usually don't need to check them all, but this list may help you become familiar with their functions.

   - *printer* This field should contain the name of the correct PRD file. If you're not sure which PRD file you need, see your printer's listing in Chapter 2, "Supported Printers."
   - *setup* Type the port to which your printer is attached. You may need to change this field if you change printers, or if you use several printers.

     For a parallel printer, type *LPT1:*, *LPT2:*, or *LPT3:*.

     For a serial printer, type *COM1:* or *COM2:*. Remember, you also need to run the operating system MODE command, if you haven't done so already. For more information, see "Parallel and Serial Interfaces" earlier in this chapter.
   - *model* Press F1 to display a list of available models.
   - *graphics resolution* Determines the resolution at which graphics embedded in the document will print.
   - *copies* Type the number of copies of the document you want.
   - *draft* Select Yes to print quickly, showing line breaks and page breaks but without microspace justification or graphics. Select No if you want to use microspace justification or print graphics.
   - *hidden text* Select Yes to print hidden text; select No to ignore the hidden text.
   - *summary sheet* Specify whether you want Word to print a summary of information saved with your document.
   - *range* Specify how much of the document you want to print.

All	Prints the entire document
Selection	Prints the selected text only
Pages	Prints the page numbers you specify

     Note If you are printing or formatting a selection, make sure you first select that part of the document. If you want to print pages, be sure to enter the page numbers in the "page numbers" field.

- *page numbers* Type the numbers of the pages you want to print, after selecting Pages in the "range" field.
- *widow/orphan control* Select Yes to prevent pages from starting or ending with a single line from a paragraph.
- *queued* Select Yes to send documents to the printer while you continue to work at your computer.
- *paper feed* Specify how paper is supplied to the printer.

Continuous	Pages are fed automatically
Manual	You insert each sheet by hand.
Bin 1, Bin 2, Bin 3, or Mixed	For sheet feeders that automatically load individual sheets of paper. The Mixed option feeds one page from bin 1 and the rest from bin 2.

- *duplex* Select No for most printers. Select Yes if your printer has duplex printing capability and you want to print the document on both sides of the paper.

2 If the PRD file you are using supports more than one font cartridge or downloadable font set, make sure that the fonts and font sizes you use to format your document are supported by the cartridge or downloadable font set you are using.

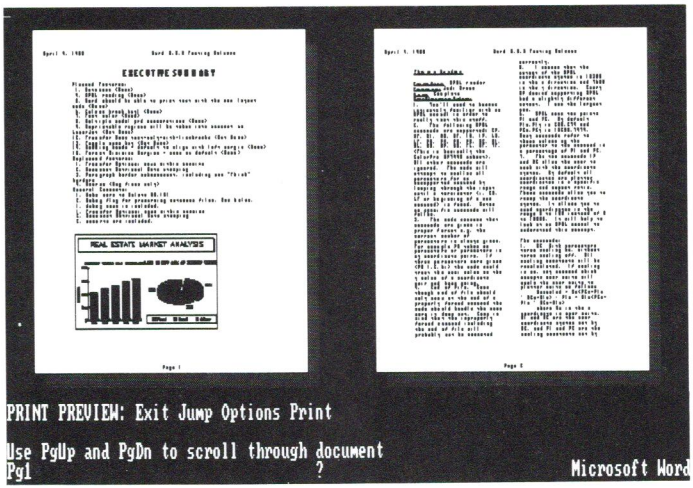
For example, HPLASER1.PRD supports many different cartridges. All of the fonts the PRD file supports, however, are not available on every cartridge. You should use only the fonts on the cartridge or cartridges you have installed in the printer. For information on the formats and fonts that each printer uses, see Chapter 2, "Supported Printers."

3 With dot matrix printers and some other printers, you may need to check the alignment of paper in the printer. The top and left margins will start wherever the print head is when you choose the Print Printer command. For example, if you have selected a one-inch top margin in the Format Division Margins command and the print head is .25 inch from the top of the page, your top margin will be 1.25 inches. For suggestions on how to line up your paper for correct margins, see "Tips" in Chapter 3, "Tips and Troubleshooting."

Displayed Text and Printed Text

When you have printed a document, you may notice differences between what you see on the screen and what your printer produces. This section describes the differences you're likely to see and the Word commands that affect your screen display.

Print preView Print preView provides a close approximation of how your printed document will look. It displays your document pages so you can see their complete layout — their margins, headings, footnotes, side-by-side paragraphs, and graphics, if any. For more information on Print preView, see Chapter 12, "Printing," in *Using Microsoft Word.*



Word has four other settings that affect how text and graphics are displayed:

Show layout (Options command) When this feature is turned on, Word displays newspaper-style columns as they are laid out, and shows side-by-side paragraphs, and graphics frames in their actual positions.

Show line breaks (Options command) When set to "Yes," Word shows where each line will end when your document prints. If text is formatted in a proportional font or a small font, you're likely to get very long lines on screen, since proportional fonts are more compact than Word's screen display font. Word can't make its screen display characters as small as the printed characters will be, so it makes long lines across the screen.

Draft (Print Options command) When set to "Yes," graphics are not printed, although empty spaces show their positions, and Print preView does not display graphics. If you have a daisywheel printer, you will not be prompted to change print wheels if there is a font or character format change. Draft printing also turns off microspace justification, so the right margin of justified text may be uneven.

Graphics Mode and Text Mode Graphics mode displays character formats like bold and italic as they'll print. Text mode identifies different formats by highlighting them, or, if you have a color monitor, by showing them in different colors. For more information, see Chapter 1, "Setting Up and Starting Word," in *Using Microsoft Word.*

Here are a few other considerations:

- On the screen, Word can display formats, such as italic, that your printer may not have.
- Word displays text as 10-pitch, fixed-pitch type. If you change to a different font, you won't see a change on screen, though you'll get a new font when you print.
- If you use a proportional font, the alignment of some paragraph formats (tabs, for instance) may look incorrect on the screen. They should align properly when you print.

Changing Printers

You can change printers by choosing the Print Options command and selecting a different PRD file in the "printer" field or by selecting a different model in the "model" field.

To change printers

1. Choose **P**rint **O**ptions and press F1 in the "printer" field to display a list of PRD files in the current directory.

   If the PRD file for the printer you want to use isn't listed, run Setup and select the printer. Or you can use the operating system COPY command to copy the PRD file or files to your Word program disk or hard disk directory. For the name of the PRD file or files you need, see Chapter 2, "Supported Printers."
2. Select the correct model in the "model" field. Press F1 to display the list of supported models.
3. If you have multiple printers attached to your computer, make sure the "setup" field of **P**rint **O**ptions shows the port for the printer you want to print with.
4. Choose **P**rint **P**rinter when you are ready to start printing.

Using Unsupported Printers

Your printer may not be included in the list of supported printers in Chapter 2 of this manual or in the Setup program. That doesn't mean the printer isn't supported, however, or that you can't use Word with it. Word provides several TTY printer driver files, described below, that provide basic support for virtually any printer. Odds are good that more sophisticated support exists as well. The bulleted list below presents some sources of information and options.

- Read the PRINTERS.DOC file on Printers disk 1. This file lists supported printers that were added to Word's printer disks after this manual went to press.
- Check with your printer dealer or manufacturer. If you've purchased a printer model that hasn't been on the market for long, your dealer or manufacturer may have a PRD file for your printer.
- Two other excellent sources of information are the Microsoft Forum on CompuServe or the Microsoft RoundTable on GEnie. Microsoft uploads new PRD files to these services. Microsoft also updates existing printer drivers for Word. If a printer has a new font cartridge or module that the existing PRD file doesn't support, for example, a new PRD file might be added to support it. You can also call Microsoft Product Support at (206) 454-2030 to ask about new PRD files.
- Another alternative is to use a printer driver for a printer that your printer emulates. Many printers emulate industry-standard printers such as the Epson FX, Diablo 630, or Hewlett-Packard LaserJet series. Consult your printer manual to see if your printer supports an emulation. If it does, the PRD file for the printer it emulates should support your printer.
- Word also has several generic PRD files that enable it to print with any printer:

If you have a	Use this PRD
Dot matrix or teletype-like printer	TTY.PRD
Dot matrix or teletype-like printer with backspace	TTYBS.PRD
Dot matrix or teletype-like printer that recognizes a form feed character at the end of a page, instead of a series of carriage returns	TTYFF.PRD
Daisywheel printer that does not have a specific printer description file supplied with Word	TTYWHEEL.PRD

- Finally, if you want to add full support for an unsupported printer, you can use the MakePRD program to modify or create a printer driver. This program is intended for use by experienced computer users. For details, see Chapter 6, "Using the MakePRD Program."

2 Supported Printers

Overview

This chapter lists the printers that Word supports and gives information on their capabilities. The printer listings also show which Word printer driver, or PRD file, supports your printer.

Supplemental Printer Disks

The PRD files for some supported printers are stored on the Supplemental Printer Disks, which are not a part of the program package you receive when you purchase Word. A message beneath the printer's name indicates if the PRD file is on the Supplemental Printer Disks. A list of printers whose PRD files are on the Supplemental Printer Disks is included at the end of the introduction to this chapter.

You can obtain the Supplemental Printer Disks from your dealer, or you can download the PRD files you need from the Microsoft Forum on CompuServe or the Microsoft RoundTable on GEnie. You can also call Microsoft Product Support to obtain the disks for a fee.

PRINTERS.DOC

Word may support your printer even if it isn't listed in this chapter. The PRINTERS.DOC file on Printers disk 1 includes a list of supported printers that were added after this manual went to press.

You can still print documents with Word if your printer is not supported. Word comes with several generic PRD files that enable it to print with any printer. See "Using Unsupported Printers" in Chapter 1, "Using Word with Printers," for more information.

About the Supported Printer Listings

Word's supported printers are listed alphabetically by manufacturer name and model (for example, the Apple LaserWriter is found under "A" for Apple).

Model Information

The Model Information section includes the following information:

- Model Name: The name of the printer model or models supported by the PRD file. These are the names that appear in the "model name" field of the Print Options command. Many PRD files support more than one model of a printer — a color and a non-color model, for example. If the PRD file for your printer supports more than one model, make sure that the selection in the "model name" field matches the name of your printer model.

- Line Drawing Font: The name of the font Word automatically uses to print boxes and lines created with the Format Border command, vertical lines, and revision marks. If the model can print the IBM graphics characters (see item below), this is also the font you must use when drawing lines with Word's line draw feature.
- IBM Graphics Characters: Yes or No, depending on whether the printer can print these characters. Word uses IBM graphics characters for line drawing. (Note: In some cases, a printer can print the graphics characters used for line drawing but not the characters Word uses for paragraph shading.) IBM graphics characters are part of the IBM extended character set, listed in full in Appendix A in *Reference for Microsoft Word*.
- Graphics Resolution: If the model can print graphics, this item shows the resolutions available. The numbers are in dots per inch, or dpi.
- Bin Support: This item is included in the model listing if Word supports one or more sheet feeders or an envelope feeder for the model.
- Unprintable Regions: Many laser printers and printers that use sheet feeders cannot print all the way to the edges of the paper. The areas where the printer cannot print on the top, bottom, left, and right sides of the paper are called unprintable regions. The numbers in this entry show the unprintable regions in decimal fractions of an inch.

  The information is presented for the benefit of users who have special formatting needs. Word's PRD files automatically compensate for a model's unprintable regions, so you do not have to adjust your margins for normal printing.

  For best results, make sure the settings in the Format Division Margins command are large enough to take into account the unprintable regions.

PRD Files

This section lists the printer driver (PRD) file or files Word requires to work with the printer.

Most printers have just one PRD file, but a printer may have more than one if it can use font cartridges or downloadable fonts — as, for example, the Hewlett-Packard LaserJet printers do. Some printers have separate PRD files for correspondence and draft-quality printing. Others have one PRD file for portrait printing and another for landscape printing.

Important The PRD files for some printers are stored on the Supplemental Printer Disks, which are not a part of the program package you receive when you purchase Word. A message appears beneath the printer name at the beginning of a listing when this is the case. See the "Supplemental Printer Disks" section of this chapter for information on how to obtain the Supplemental Printer Disks.

Printer Features

A Printer Features chart illustrates each printer's capabilities. When a category is marked with a square bullet, the printer has the capability indicated.

Note that for listings which cover more than one model, the chart shows the features of the most capable model.

The following are definitions and notes about each of the capabilities listed in the Printer Features chart.

Bold A character format in which characters are thicker or darker than plain characters. Example: **Bold**.

Italic A character format that slants characters forward. Example: *Italic*. On daisywheel printers, italic is a separate font, and you must change the print wheel to the appropriate font to print italic.

If a printer cannot print italics, Word substitutes an underline.

Underline and double underline One or two lines underneath text or blank space. On a few printers, Word creates a dotted, rather than a solid underline. Example: underline and double underline.

Microspace justification Microspace justification places an equal amount of space between each word in a paragraph with justified margins. If a printer doesn't do microspace justification, Word uses full spaces to justify text, and margins may not align perfectly if you use more than one font size in a document.

Superscript and subscript Characters print above or below the normal line level. Example: This is superscript and this is subscript.

Small caps Lowercase letters are printed in uppercase, but in the next smaller font size. Uppercase letters are printed in their normal size. A printer can print small capital letters only if there is a smaller size available in the font you are using. Example: SMALL CAPS.

Strikethrough Prints a horizontal line through text. Example: ~~strikethrough~~.

IBM graphics characters Word uses these characters for line drawing. If your printer can't print this character set, you can't take full advantage of Word's line drawing features.

Graphics Graphics images or pictures. The graphics resolution item in the Model Information section shows the resolutions available for each model in dots per inch (dpi).

Note that on laser printers, graphics sometimes require more printer memory than is available. The printer may reduce the size of the image if it runs out of memory.

Font Information

This section includes general notes about the fonts Word supports for each printer and a table that lists all the fonts the printer can print. The table lists each font by name as it appears in the "font name" field of the Format Character command and shows all sizes of the font supported by Word.

The table lists each font by name as it appears in the "font name" field of the Format Character command and shows all sizes of the font supported by Word.

ALPS P2000

The printer's name

The PRD file for this printer is available on the Supplemental Printer Disks.

General notes on the printer

PRD File

ALPS2000.PRD

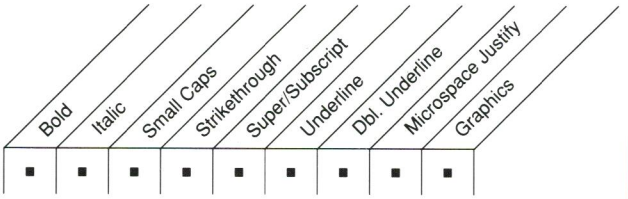
The PRD file or files Word requires to work with the printer

Model Information

Model Name:	Alps P2000
Line Drawing Font:	Pica
IBM Graphics Characters:	Yes
Graphics Resolution(dpi):	60, 120, 240

Model-specific capabilities (a PRD file may support different printer models)

Printer Features



The printer's capabilities

Font Information

Font sizes 17 and 18 are double-high (they use two lines); in these sizes, underline and double underline are not supported.

When creating a border with the Format Border command around double-high or double-wide characters, add a new line by pressing SHIFT + ENTER after the last line of text.

The PSNLQ and PSNLQD fonts do not support superscript or subscript.

Fonts	Font sizes
Pica	8, 12, 13, 14, 16, 18
PicaD	8, 12, 13, 14, 16, 18
Elite	10, 15, 17
EliteD	10, 15, 17
NLQ	8, 10, 12, 13, 14, 15, 16, 17, 18
NLQD	8, 10, 12, 13, 14, 15, 16, 17, 18
HighDensity	8, 10, 12, 13, 14, 15, 16, 17, 18
HighDensityD	8, 10, 12, 13, 14, 15, 16, 17, 18
PS	12, 16, 18
PSD	12, 16, 18
PSNLQ	12, 16, 18
PSNLQD	12, 16, 18
PSHighDensity	12, 16, 18
PSHighDensityD	12, 16, 18

Names, sizes, and notes on fonts Word supports

A Sample Printer Listing

The font sizes are in points. On dot matrix printers, compressed and expanded fonts are treated as smaller or larger font sizes.

The listings for printers which can use a variety of font cartridges or downloadable fonts may include font information tables for each cartridge or set of downloadable fonts. Each table is associated with a particular PRD file.

Word adds abbreviations to the end of some font names to indicate how they will print. For example, "PicaD" means a doublestrike Pica font used for bold formatting. Here are the abbreviations Word uses:

PS	Proportional spacing
D	Doublestrike
LQ	Letter quality
C	Correspondence quality
NLQ	Near letter-quality
PD	Proportional space doublestrike

Pitch and Points

Word uses points, a typographical measurement equal to 1/72 inch, to measure font sizes. The sizes listed when you press F1 in the "font size" field of the Format Character command are in points. Dot matrix printers typically measure character size in characters per inch (cpi) or pitch. The table below lists some pitch and point equivalents.

Points (1/72 inch)	Pitch (characters per inch)
6	20
7.5	16
8	15
8.5	14
9	13
10	12
11	10.9
12	10
13	9.2
14.5	8.3
15	8
16	7.5
18	6.7
20	6
24	5
30	4

To convert pitch to points:

- Divide 120 by the pitch; for example, 12 pitch is 10 points (120/12 = 10).

To convert points to pitch:

- Divide 120 by the points; for example, 10 points is 12 pitch (120/10 = 12).

Supplemental Printer Disks

The PRD files for the printers listed below are stored on the Supplemental Printer Disks. The Supplemental Printer Disks are not a part of the Word program package you receive when you purchase Word. Your package should include a coupon you can send in to order these disks.

You may also be able to obtain the Supplemental Printer Disks from your dealer. Or you can download the PRD files you need from the Microsoft Forum on CompuServe or the Microsoft RoundTable on GEnie.

As indicated in the following list, for some printers, support for downloadable fonts is on the Supplemental Printer Disks, while support for other fonts comes with the Word package.

ALPS P2000
Anadex DP-6500
Anadex DP-9625
Anadex DP-9725
Anadex WP-6000
Brother M-1509
Brother M-1709
Brother Twinriter 5
Canon LBP-8A1/A2
CIE LIPS 10 Plus
C.Itoh F10
C.Itoh ProWriter Junior
C.Itoh StarWriter FP-1500-45P
Cordata/Corona LP300
DEC LNO3
Diablo 620
Diablo 630 API
Diablo 630 ECS
Diablo P32
Epson GQ-3500
Epson MX-80/100 with Graftrax Plus
Epson MX-80/100
Fujitsu DL2400
Hewlett-Packard 2934A
Hewlett-Packard DeskJet downloadable fonts
(support for other DeskJet fonts comes with Word)

(continued)

HP LaserJet Series

Support for the following downloadable font sets is on the Supplemental Disks:

AE AF AG DA EA RA RB SA SB TA TB UA UB

(support for other LaserJet fonts comes with Word)

HP ThinkJet

IBM Color Inkjet

IBM Proprinter 24X/24XL downloadable fonts

(support for other Proprinter fonts comes with Word)

Kyocera F-1010

Mannesmann Tally 1x

Mannesmann Tally 80

Mannesmann Tally 910

MSPRINT

NCR-6416 Laser Printer

NEC Spinwriter 3550

NEC Spinwriter 7710

NEC P2/P3

Okidata Pacemark 2410

PLAIN

QMS Colorgrafix

QMS Smartwriter

Quadram Quadlaser

Qume Sprint 11

Ricoh LP4080R Laser

Seikosha BP-5420AI

Seikosha SP-1000

Silver Reed Exp 400

Star Micronics Delta

Star Micronics Radix

Tandy DMP 106

Tandy DMP 200

Tandy DMP 400

Tandy DMP 2100

Tandy DMP 2200

Tandy DWII

Texas Instruments TI-850

Xerox 2700

Xerox 4045 downloadable fonts

(support for other Xerox 4045 fonts comes with Word)

Supported Printers

ALPS ALQ 200/300

This dot matrix printer can use interchangeable 18-pin and 24-pin print heads. There is a PRD file for each print head type.

Color models can print in black, red, green, blue, magenta, violet, and yellow.

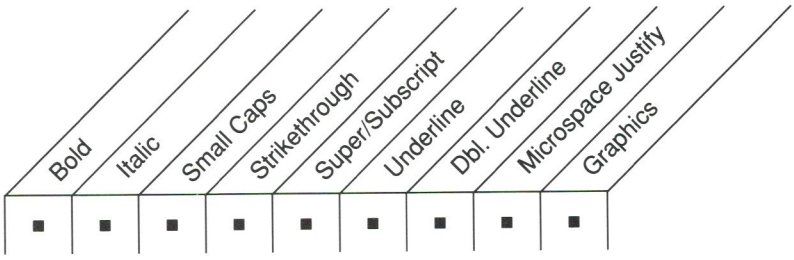
PRD Files

ALQ20018.PRD	Supports 18-pin print head.
ALQ20024.PRD	Supports 24-pin print head.

Model Information

Model Names:	ALQ 200/300 Color ALQ 200/300 ALQ 200/300 Color (3 bin) ALQ 200/300 (3 bin)
IBM Graphics Characters:	No
Graphics Resolution (dpi):	60, 120, 240 with 18-pin print head; 60, 180 with 24-pin print head. Color models cannot print at the highest resolution.
Bin Support:	Sheetfeeder models support a dual-bin sheetfeeder with envelope feed.

Printer Features



Font Information

Font sizes above size 16 are double high and double wide (they use two lines). In these sizes, underline and double underline are not supported. When creating a border with the Format Border command around double-high or double-wide characters, add a new line by pressing SHIFT + ENTER after the last line of text.

The CartridgeFont and CartridgeNLQ fonts are available on optional font cartridges, which must be purchased separately.

Fonts	Font sizes	Notes
Pica	8, 12, 14, 16, 18, 24	
PicaD	8, 12, 14, 16, 18, 24	
Elite	6, 10, 12, 15, 17, 19	
EliteD	6, 10, 12, 15, 17, 19	
NLQ	6, 8, 10, 12, 14, 15, 16, 17, 18, 19, 24	
CartridgeFont	6, 8, 10, 12, 14, 15, 16, 17, 18, 19, 24	ALQ20024.PRD only
CartridgeNLQ	6, 8, 10, 12, 14, 15, 16, 17, 18, 19, 24	ALQ20024.PRD only
PS	12, 16, 24	
NLQPS	12, 16, 24	

ALPS P2000

The PRD file for this printer is available on the Supplemental Printer Disks.

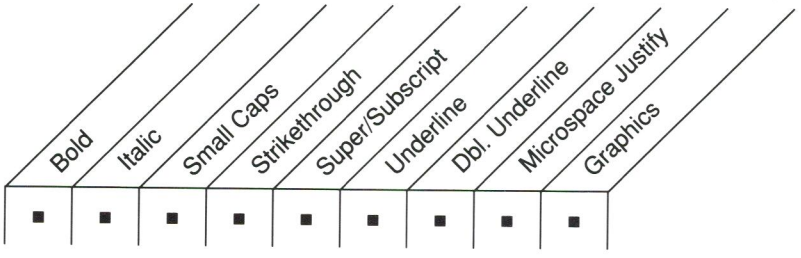
PRD File

ALPS2000.PRD

Model Information

Model Name:	Alps P2000
Line Drawing Font:	Pica
IBM Graphics Characters:	Yes
Graphics Resolution (dpi):	60, 120, 240

Printer Features



Font Information

Font sizes 17 and 18 are double-high (they use two lines); in these sizes, underline and double underline are not supported.

When creating a border with the Format Border command around double-high or double-wide characters, add a new line by pressing SHIFT + ENTER after the last line of text.

The PSNLQ and PSNLQD fonts do not support superscript or subscript.

Fonts	Font sizes
Pica	8, 12, 13, 14, 16, 18
PicaD	8, 12, 13, 14, 16, 18
Elite	10, 15, 17
EliteD	10, 15, 17
NLQ	8, 10, 12, 13, 14, 15, 16, 17, 18
NLQD	8, 10, 12, 13, 14, 15, 16, 17, 18
HighDensity	8, 10, 12, 13, 14, 15, 16, 17, 18
HighDensityD	8, 10, 12, 13, 14, 15, 16, 17, 18
PS	12, 16, 18
PSD	12, 16, 18
PSNLQ	12, 16, 18
PSNLQD	12, 16, 18
PSHighDensity	12, 16, 18
PSHighDensityD	12, 16, 18

Anadex DP-6500

The PRD file for this printer is available on the Supplemental Printer Disks.

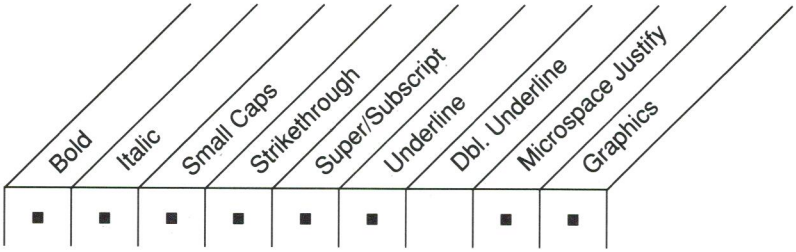
PRD File

ANDX6500.PRD

Model Information

Model Name:	Anadex DP-6500
IBM Graphics Characters:	No
Graphics Resolution (dpi):	72
Bin Support:	Bins 1-2

Printer Features



Font Information

Fonts	Font sizes
Draft	10, 12, 20, 24
Pica	7.5, 8, 10, 12, 15, 16, 20, 24
PicaD	10, 12, 20, 24
PS	12, 24
PD	12, 24

Anadex DP-9625

The PRD file for this printer is available on the Supplemental Printer Disks.

This printer can be connected to either a serial or parallel port. If you use a parallel connection, set all the switches on switch banks SW1 and SW3 to OFF. See the manual that came with your printer for more information.

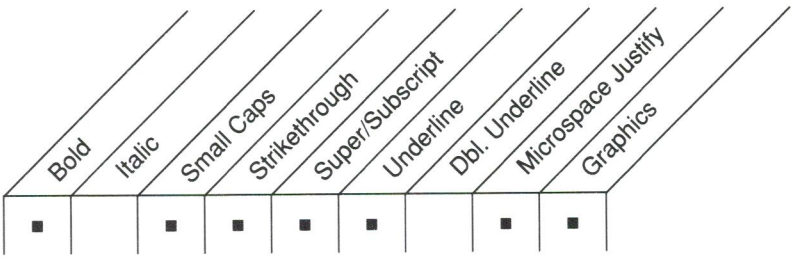
PRD File

ANDX9625.PRD

Model Information

Model Name:	Anadex DP-9625
IBM Graphics Characters:	No
Graphics Resolution (dpi):	72

Printer Features



Font Information

Fonts	Font sizes
Pica	7.5, 8, 10, 12, 15, 16, 20, 24
PicaD	10, 12, 20, 24
Draft	12, 24
PS	12, 24
PD	12, 24

Anadex DP-9725/Printronix DP-9725 Color Scribe

The PRD file for this printer is available on the Supplemental Printer Disks. To print color, you must have the optional Process Ribbon Cartridge.

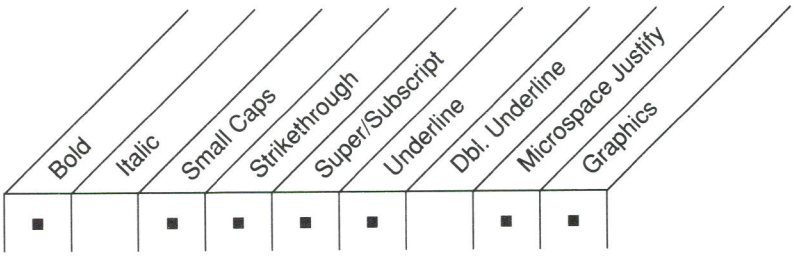
PRD File

ANDX9725.PRD

Model Information

Model Name:	Anadex DP-9725
IBM Graphics Characters:	No
Graphics Resolution (dpi):	72

Printer Features



Font Information

Fonts	Font sizes	Notes
Draft	12, 24	
Pica	7.5, 8, 10, 12, 15, 16, 20, 24	
PicaD	10, 12, 20, 24	
PS	12, 24	
PD	12, 24	Proportional, doublestrike font

Anadex WP-6000

The PRD files for this printer are available on the Supplemental Printer Disks.

The Anadex WP-6000 can print at three levels of quality: draft quality, letter quality, and correspondence quality (highest quality). Draft-quality mode prints the fastest.

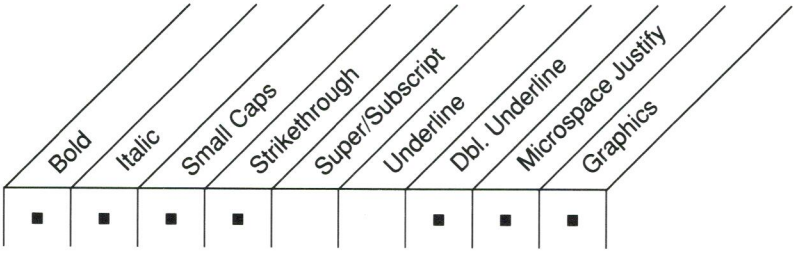
PRD Files

ANDX60CS.PRD	Use for correspondence quality.
ANDX60LT.PRD	Use for letter quality.
ANDX60DP.PRD	Use for draft quality.

Model Information

Model Name:	Anadex WP-6000
IBM Graphics Characters:	No
Graphics Resolution:	72
Bin Support:	Bins 1-2

Printer Features



Font Information

The Anadex WP 6000 has special superscript and subscript fonts. If you want text to print as superscript or subscript, you must format the text in the appropriate superscript or subscript font. You cannot simply select Yes in the "superscript" or "subscript" fields of the Format Character command.

Fonts with a "P" at the end of their names are proportional.

Fonts	Font sizes	Notes
Correspondence	7, 10, 12, 14.5, 20, 24	ANDX60CS.PRD only
Draft	10, 12, 20, 24	ANDX60DP.PRD only
Serifa	10, 12, 20, 24	
Superscript	7, 7.5, 8, 9, 10, 12	
Superscript-D	14.5, 15, 16, 18, 20, 24	
Subscript	7, 7.5, 8, 9, 10, 12	
Subscript-D	14.5, 15, 16, 18, 20, 24	
Helvetica	10, 12, 20, 24	
Serifa-P	12, 24	
Superscript-P	12, 24	
Subscript-P	12, 24	
Helvetica-P	12, 24	
Scientific-P	12, 24	

Apple LaserWriter Series

Word supports three LaserWriter models: LaserWriter, LaserWriter Plus, and LaserWriter NT/NTX. Word supports these PostScript printers when they are connected with a special serial cable to an IBM PC or compatible personal computer. Ask your dealer for a cable that connects an IBM PC to an Apple LaserWriter.

Word uses two PRD files to support LaserWriter printers, POSTSCRP.PRD for built-in fonts, and PSDOWN.PRD for downloadable Adobe fonts. In addition, two associated INI files, POSTSCRP.INI, and PSDOWN.INI, are required. If you download fonts with PSDOWN.PRD, you'll also need the PSDOWN.DAT file. These files are automatically copied by the Setup program along with the PRD file. If you don't use Setup to install your PRD files, be sure to copy the INI and DAT files to the same directory as the PRD file.

The POSTSCRP.PRD and PSDOWN.PRD files provide support for a variety of PostScript printer models. To use a LaserWriter printer, select the PostScript-Single Bin model in the "model" field of the Print Options command.

LaserWriter printers can automatically rotate fonts for printing in landscape mode. No special cartridges or PRD files are required. When printing in landscape mode, you must choose the Format Division Margins command and reverse the settings in the "page length" and "width" fields. For example, if you're using letter-sized paper for landscape printing, the "width" field should be set to 11 inches and the "page length" field to 8.5 inches.

PSDOWN.PRD provides built-in support for a basic set of downloadable fonts and is capable of supporting any Adobe PostScript downloadable font (the downloadable fonts themselves must be purchased separately). You can use Word's MergePRD utility to add support for downloadable fonts not already supported. See "To add support for downloadable PostScript fonts" in Chapter 5, "Using the MergePRD Program," for more information.

You can also use MergePRD to create a new PRD file that supports a combination of built-in and downloadable fonts.

To set up a LaserWriter printer to use with Word:

1. Set the switch on the side of the printer to 9600 baud.
2. Use the DOS or OS/2 MODE command to set the baud rate to 9600, no parity, 8 data bits, and 1 stop bit. At the DOS or OS/2 prompt, type
   mode com1:9600,n,8,1,p
   (or *mode com2:9600,n,8,1,p*).

   To avoid using the MODE command every time you start, you can create an AUTOEXEC.BAT file to run the MODE command automatically when you start your computer. For details on AUTOEXEC.BAT files, see the DOS or OS/2 manual that came with your computer.
3. Run Setup. Word copies POSTSCRP.PRD and POSTSCRP.INI if you install a LaserWriter. If you install a LaserWriter with downloading specified, PSDOWN.PRD, PSDOWN.INI, and PSDOWN.DAT will be copied.

   You can also copy these files yourself with the DOS or OS/2 COPY command.
4. Start Word. Choose **P**rint **O**ptions and check to make sure that POSTSCRP.PRD appears in the "printer" field. If it doesn't appear there, type the complete pathname to the file.
5. Select PostScript-Single Bin in the "model" field. Select Adobe Download Fonts in the "model" field if you are using PSDOWN.PRD.

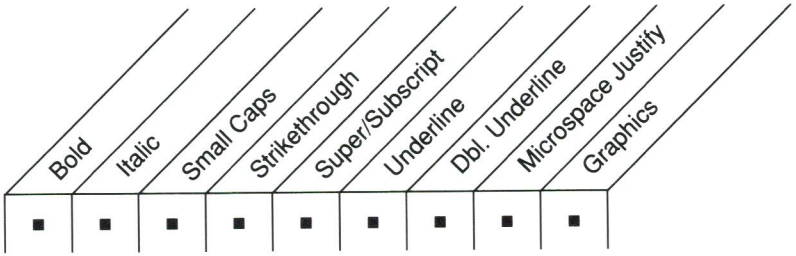
PRD Files

POSTSCRP.PRD	Use for built-in fonts.
PSDOWN.PRD	Use for downloadable Adobe fonts.

Model Information

Model Names:	PostScript-Single Bin Adobe Download Fonts
Line Drawing Font:	LineDraw
IBM Graphics Characters:	Yes
Graphics Resolution (dpi):	300
Unprintable Regions:	Top: 0.22, Left: 0.33, Bottom: 0.25, Right: 0.26

Printer Features



Font Information

Fonts are available in sizes between 2 points and 126 points, in increments of two points. LineDraw is available only in 12 point.

PRD Files	Fonts	Notes
POSTSCRP.PRD		
	Courier	
	Helvetica	
	AvantGarde	Not available on original LaserWriter
	HelveticaNarrow	Not available on original LaserWriter
	Bookman	Not available on original LaserWriter
	Times-Roman	
	NewCentSchlbk	Not available on original LaserWriter
	Palatino	Not available on original LaserWriter
	ZapfChancery	Not available on original LaserWriter
	Symbol	No bold or italic
	LineDraw	Available in 12-point font size only
	ZapfDingbats	Not available on original LaserWriter

(continued)

PRD Files	Fonts
PSDOWN.PRD	Courier Letter-Gothic Helvetica HelveticaCondensed ITC-Korinna Times-Roman CenturyOldStyle ITC-Souvenir ITC-Garamond Bodini ParkAvenue Orator Symbol LineDraw

AST TurboLaser

You need to use the utility supplied by AST to download fonts before starting Word.

You must download the LC12 font before using the AST TurboLaser (Landscape) model. See your printer manual for more information.

The AST TurboLaser requires separate INI files for portrait and landscape printing. These files are installed automatically with ASTTURBO.PRD if you use Setup. Otherwise copy both INI files to the same directory or disk where you store ASTTURBO.PRD.

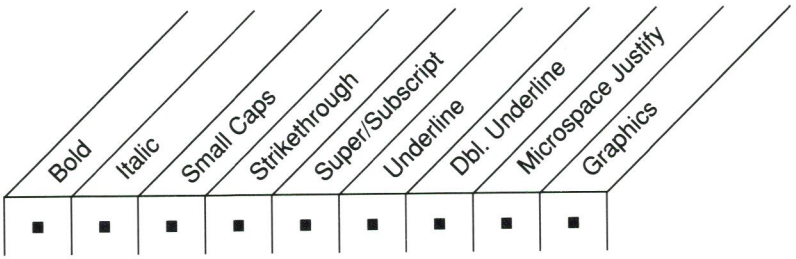
PRD File

ASTTURBO.PRD	ASTTURBO.INI or ASTURBOL.INI also is required.

Model Information

Model Names:	AST TurboLaser (Portrait) AST TurboLaser (Landscape)
IBM Graphics Characters:	No
Graphics Resolution (dpi):	150
Unprintable Regions:	Top: 0.25, Left: 0.25, Bottom: 0.25, Right: 0.25

Printer Features



Font Information

Bold and italic capabilities vary from font to font. Where italic is not available, underline is substituted. When using proportional fonts, double underlines may not end exactly at the end of the text.

Fonts	Font sizes	Notes
Courier	6, 7, 9, 12	Bold, italic, bold italic size 12 only
LetterGothic	7, 10	Bold, italic, size 10 only
Swiss	8, 10, 12, 14, 18, 24, 36	Bold sizes 8 and 10; italic size 10 only
Dutch	8, 10, 14, 24, 36	Bold, italic, size 10 only

AST TurboLaser/PS

Word uses the POSTSCRP.PRD file to support this printer. See the "PostScript Printers" listing in this chapter.

Brother BPI 5420AI

See the "Seikosha BPI 5420AI" listing in this chapter.

Brother HR-15/25/35

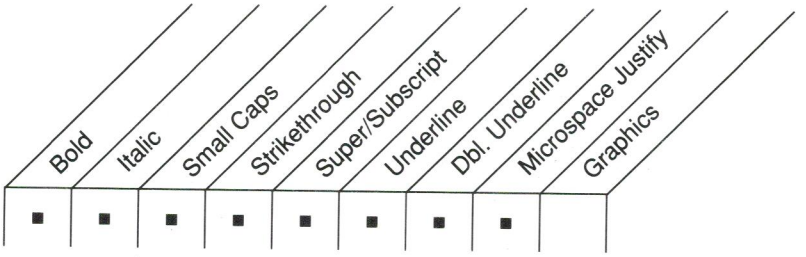
PRD File

BROTHER.PRD

Model Information

Model Name: HR-15 & HR-25 & HR-35
IBM Graphics Characters: No

Printer Features



Font Information

Italics and font changes require you to change the print wheel.

Fonts	Font sizes
Pica	12
Brougham	8, 10, 12
Elite	10
Prestige	10, 12
LetterGothic	10
LoriPS	12
Quadro	8, 10, 12
OCR-B	12
AneliaPS	12
Script	10, 12
SuperGrande	12
Grande	12
Symbol	12

Brother M-1509/1709

The PRD file for this printer is available on the Supplemental Printer Disks. Word supports this printer in Epson emulation mode.

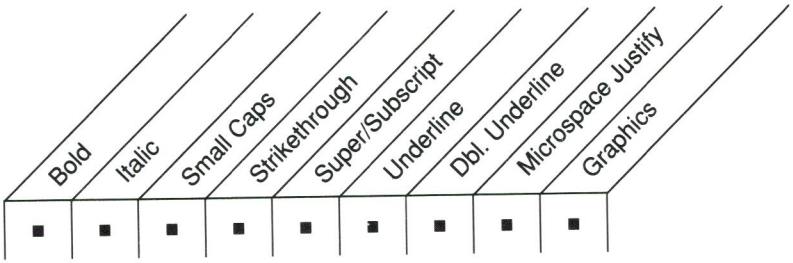
PRD File

BROM1509.PRD

Model Information

Model Name:	Brother M-1509 & M-1709
IBM Graphics Characters:	No
Graphics Resolution (dpi):	60, 120, 240

Printer Features



Font Information

Fonts	Font sizes	Notes
Pica	7, 12, 14, 16	
PicaD	7, 12, 14, 16	
Elite	6, 10, 12, 15	
EliteD	6, 10, 12, 15	
GothicNLQ	7, 10, 12, 14, 15, 16	Requires the LQ100/200 fonts board
QuadroNLQ	10, 12, 15, 16	Requires the LQ100/200 fonts board
PS	12, 16	
AneliaPS	12, 16	Requires the LQ100/200 fonts board

Brother M-1724L

Word supports this printer in Epson emulation mode.

You must set Switch 1-4 inside the printer to ON to access IBM graphics characters.

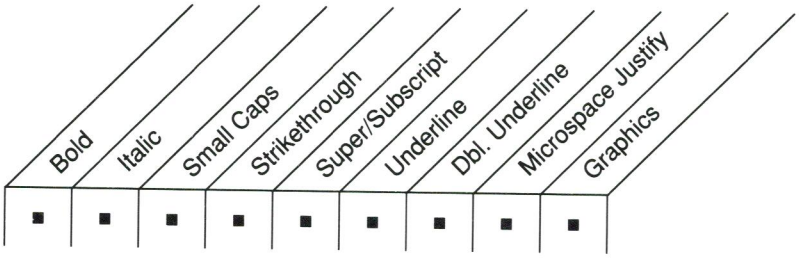
PRD File

BROM1724.PRD

Model Information

Model Name:	Brother M-1724L
Line Drawing Font:	Pica
IBM Graphics Characters:	Yes
Graphics Resolution (dpi):	60, 180

Printer Features



Font Information

Bold is unavailable in font sizes above 12 points.

Fonts	Font sizes	Notes
Pica	7, 8, 12, 13, 14, 16, 18, 19, 24	
PicaD	7, 8, 12, 13, 14, 16, 18, 19, 24	
Elite	6, 10, 12, 15, 17, 20	
EliteD	6, 10, 12, 15, 17, 20	
BroughamNLQ	6, 7, 8, 10, 12, 13, 14, 15, 16, 17, 18, 19, 20, 24	
PrestigeNLQ	10, 12, 15, 16, 20, 24	Requires the LQ300 fonts board
QuadroNLQ	10, 12, 15, 16, 20, 24	Requires the LQ300 fonts board
PS	12, 16	
AneliaPS	12	Requires the LQ300 fonts board

Brother SP-1000

See the "Seikosha SP-1000" listing in this chapter.

Brother Twinriter 5

The PRD files for this printer are available on the Supplemental Printer Disks.

This printer uses both a dot matrix print head and a daisywheel. The dot matrix print head and the daisywheel support different fonts. Be sure to install the correct PRD file for the set of fonts you wish to use. Graphics are not available with the daisywheel print head.

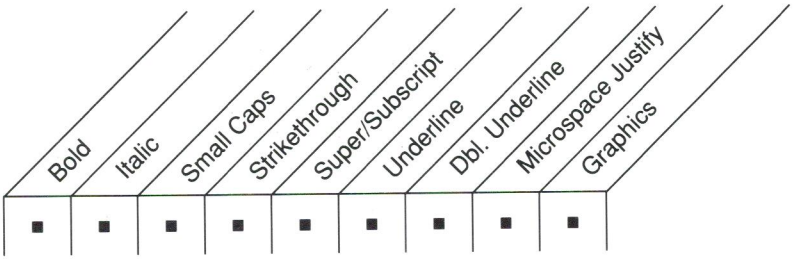
PRD Files

TWIN5DM.PRD	Use for the dot matrix print head.
BROTWIN5.PRD	Use for the daisywheel print head.

Model Information

Model Names:	Brother Twinriter 5 (Wheel) Twinriter 5 (Dot Matrix)
Line Drawing Font:	Pica
IBM Graphics Characters:	Yes (TWIN5DM.PRD only)
Graphics Resolution (dpi):	60, 120, 240 (TWIN5DM.PRD only)
Bin Support:	Dual-bin sheetfeeder

Printer Features



Font Information

With a daisywheel print head (BROTWIN5.PRD), italics and font changes require a print wheel change.

IBM extended characters are available in PS fonts, but do not print proportionally.

PRD Files	Fonts	Font sizes
TWIN5DM.PRD (dot matrix fonts)	Pica	8, 12, 14, 16
	PicaD	8, 12, 14, 16
	Elite	10, 15
	EliteD	10, 15
	PS	12, 16

(continued)

PRD Files	Fonts	Font sizes
BROTWIN5.PRD (daisywheel fonts)	Pica	12
	Brougham	8, 10, 12
	Elite	10
	Prestige	10, 12
	LetterGothic	10
	LoriPS	12
	Quadro	8, 10, 12
	OCR-B	12
	AneliaPS	12
	Script	10, 12
	SuperGrande	12
	Grande	12
	Symbol	12

Businessland 45LQ

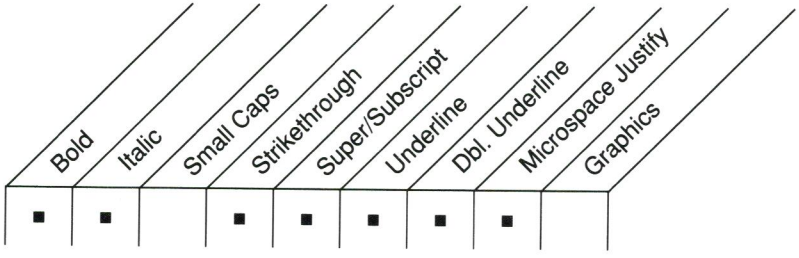
PRD File

BL45LQ.PRD

Model Information

Model Name:	Businessland 45LQ
IBM Graphics Characters:	No
Bin Support:	Dual-bin sheetfeeder

Printer Features



Font Information

IBM extended characters are available through ASCII 175. Foreign characters can be printed, but characters used for line drawing and paragraph shading are not available.

Fonts	Font sizes
Pica	12
Courier	12
Elite	10
Victoria	10, 12
LetterGothic	8, 10
KentPS	12
Tiber	12
VeneziaPS	12
Roma	10
ItalicPS	12
Orator	12

C.Itoh C-310/15 XP and CXP

Word supports this printer in IBM Proprinter emulation mode. Use the menu on the front panel of the printer to select this mode.

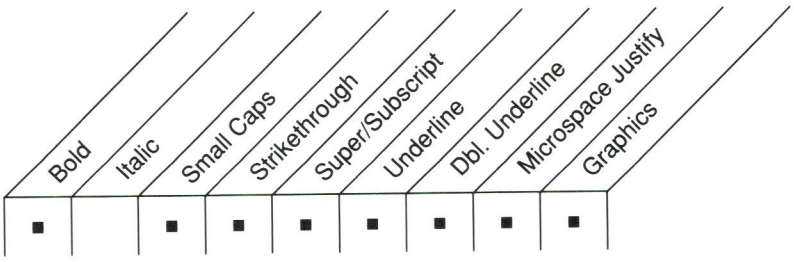
PRD File

CITOH310.PRD

Model Information

Model Names:	C310/15 CXP Color C310/15 XP
Line Drawing Font:	Linedraw
IBM Graphics Characters:	Yes
Graphics Resolution (dpi):	60, 120
Bin Support:	Dual-bin sheetfeeder

Printer Features



Font Information

Underline is substituted for italics.

Fonts	Font sizes
Pica	8, 12, 14, 16
PicaD	8, 12, 14, 16
Elite	10, 15
EliteD	10, 15
NLQ	8, 10, 12, 14, 15, 16
NLQD	8, 10, 12, 14, 15, 16
PS	12, 16
PSNLQ	12, 16

C.Itoh C-715A Reliant

The PRD file for this printer supports the LQ 1000 emulation card. Printing in color reduces printing speed.

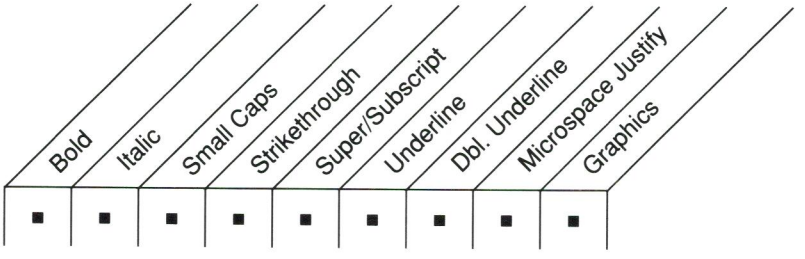
PRD File

CITOH715.PRD

Model Information

Model Names:	C-715A Reliant (Color) C-715A Reliant
IBM Graphics Characters:	No
Graphics Resolution (dpi):	60, 120
Bin Support:	Dual-bin sheetfeeder

Printer Features



Font Information

Using this printer's control panel, you can align the double high fonts (DblHiNLQ and DblHiNLQD) to "top," "middle," or "bottom." These fonts take up two lines. Generally, you will get best results with alignment set to "middle."

Underline and double underline, however, will pass through DblHiNLQ and DblHiNLQD characters when alignment is set to "middle." If you set alignment to "bottom," underlines will be aligned properly.

IBM extended characters are available through ASCII 175. Foreign characters can be printed, but characters used for line drawing and paragraph shading are not available. Extended characters in proportional fonts do not print proportionally.

Fonts	Font sizes
Pica	8, 9, 12, 13, 14, 16
PicaD	8, 9, 12, 13, 14, 16
Elite	7, 10, 12, 15
EliteD	7, 10, 12, 15
NLQ	7, 8, 9, 10, 12, 13, 14, 15, 16
NLQD	7, 8, 9, 10, 12, 13, 14, 15, 16
DblHiNLQ	17, 18, 19, 20, 21, 22, 23, 24, 25
DblHiNLQD	17, 18, 19, 20, 21, 22, 23, 24, 25
PS	12, 16
PSD	12, 16
Linedraw	12

C.Itoh CIE LIPS 10 Plus

The PRD files for this printer are available on the Supplemental Printer Disks.

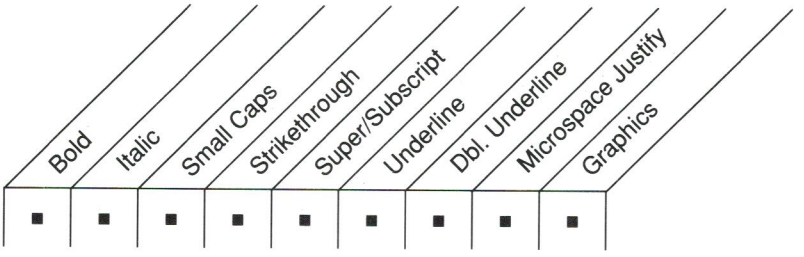
PRD Files

LIPS10-1.PRD	Use for cartridges B, D, E, G, H, J.
LIPS10-2.PRD	Use for cartridges 6-F, 11-K.
LIPS10-3.PRD	
LIPS10-L.PRD	Use for landscape printing, cartridges B and G.

Model Information

Model Names:	CIE LIPS 10 Plus CIE LIPS 10 Plus (Landscape) (LIPS10-L.PRD only)
IBM Graphics Characters:	No
Graphics Resolution (dpi):	75, 150, 300
Unprintable Regions:	Top: 0.03 Left: 0 Bottom: 0.03 Right: 0

Printer Features



Font Information

PRD Files	Fonts	Font sizes
LIPS10-1.PRD		
	Courier	12, 24
	CourierLegal[H]	12
	Elite	10, 20
	Prestige[D/H/J]	7, 10
	LetterGothic[E]	10
	PrestigeLegal[G]	7, 10
	EDP	6
	LinePrinter	8.5
	HELV[B]	14
	Gothic	7, 14.5
	TMSRMN[B]	8, 10
	Danish/Norwegian[C]	12
	UnitedKingdom[C]	12
	French[C]	12
	German[C]	12
	Italian[C]	12
	Swedish/Finnish[C]	12
	Spanish[C]	12
	PiFont[J]	10
	LineDraw[G/H]	10, 12
	Math7[J]	10
	Math8[J]	7, 10

(continued)

PRD Files	Fonts	Font sizes
LIPS10-2.PRD		
	Courier	12, 24
	Elite	10, 20
	EDP	6
	LinePrinter	8.5
	HELV[F]	14
	Gothic	7, 14.5
	TMSRMN[F/K]	8, 10
	PiFont[K]	10
	Math7[K]	10
	Math8[K]	8, 10
LIPS10-3.PRD		
	Courier	12, 24
	Elite	10, 20
	EDP	6
	LinePrinter	8.5
	HELV	6, 8, 10, 12, 14
	Gothic	7, 14.5
	LineDraw	12
LIPS10-L.PRD		
	Courier	12
	Prestige[G]	7
	LinePrinter[B]	8.5

C.Itoh F10-40/55

The PRD file for these printers is available on the Supplemental Printer Disks.

Do not use proportional fonts unless you have installed the printer's word processing option.

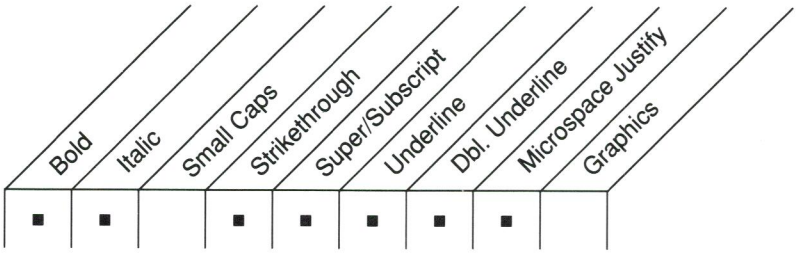
PRD File

CITOHF10.PRD

Model Information

Model Name:	C.Itoh F10-40/55
IBM Graphics Characters:	No
Bin Support:	Bins 1-2

Printer Features



Font Information

Fonts	Font sizes
Pica	12
Courier	12
Elite	10
Prestige	10, 12
LetterGothic	8, 10
GothicPS	12
CubicPS	12
Titan	10, 12
OCR-A	12
OCR-B	12
BoldPS	12
TrendPS	12
RomanPS	12
Script	10
ScriptPS	12
Narrator	12
Emphasis	12
Kana	10, 12
Hebrew	10

C.Itoh Jet-Setter

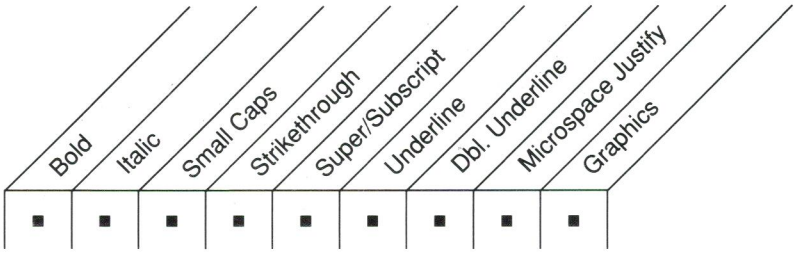
PRD Files

CITOHJS1.PRD	Use for portrait fonts on B, C, D, H, J, K, L cartridges.
CITOHJS2.PRD	Use for portrait fonts on F, K cartridges.
CITOHJS3.PRD	Use for portrait fonts on T cartridge.
CITOHJSL.PRD	Use for landscape fonts for internal fonts and G cartridge.

Model Information

Model Name:	Jet-Setter
Line Drawing Font:	CourierPC
IBM Graphics Characters:	Yes
Graphics Resolution (dpi):	75, 150, 300
Unprintable Regions:	Top: 0.20, Left: 0.17, Bottom: 0, Right: 0.33

Printer Features



Bold	Italic	Small Caps	Strikethrough	Super/Subscript	Underline	Dbl. Underline	Microspace Justify	Graphics
■	■	■	■	■	■	■	■	■

Font Information

PRD Files	Fonts	Font sizes
CITOHJS1.PRD		
	Courier	12
	CourierPC	12
	CourierLegal[8-H]	12
	PrestigeLegal[7-G]	7, 10
	Prestige[D/H/J]	7, 10
	LetterGothic[5-E]	10
	CourierPC	12
	LinePrinter	8.5
	HELV[2-B]	14
	TMSRMN[2-B]	8, 10
	Danish/Norwegian[3-C]	12
	UnitedKingdom[3-C]	12
	French[3-C]	12
	German[3-C]	12
	Italian[3-C]	12
	Swedish/Finnish[3-C]	12
	Spanish[3-C]	12
	PiFont[10-J]	10
	LineDraw[G/H]	10, 12
	Math7[10-J]	10
	Math8[10-J]	7, 10

(continued)

PRD Files	Fonts	Font sizes
CITOHJS2.PRD		
	Courier	12
	CourierPC	12
	LinePrinter	8.5
	HELV[6-F]	14
	TMSRMN[6-F/11-K]	8, 10
	PiFont[11-K]	10
	Math7[11-K]	10
	Math8[11-K]	8, 10
CITOHJS3.PRD		
	Courier	12
	CourierPC	12
	LinePrinter	8.5
	HELV	6, 8, 10, 12, 14
	LineDraw	12
CITOHJSL.PRD		
	Courier	12
	CourierPC	12
	Prestige[7-G]	7
	LinePrinter	8.5

C.Itoh ProWriter 815 Supra

Word supports this printer in IBM Proprinter XL emulation mode.

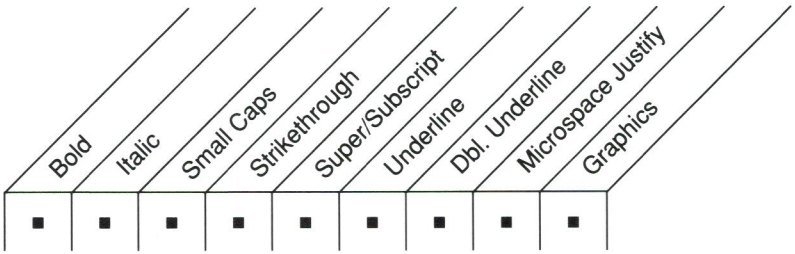
PRD File

CITOH815.PRD

Model Information

Model Name:	C-815 Supra
Line Drawing Font:	Pica
IBM Graphics Characters:	Yes
Graphics Resolution (dpi):	60, 120, 240

Printer Features



Font Information

The Enlarged font and font sizes 30 or larger take up two or more lines. In these sizes, underline and double underline print through the middle of characters. When creating a border with the Format Border command in these font sizes, add a new line by pressing SHIFT + ENTER after the last line of text.

Fonts	Font sizes
Pica	8, 12, 14, 16
Elite	10, 15
NLQ	8, 10, 12, 14, 15, 16
PicaPS	12, 16
ElitePS	10, 15

C.Itoh ProWriter Junior

The PRD file for this printer is available on the Supplemental Printer Disks.

To increase print speed, select Yes in the "draft" field in the Print Options command.

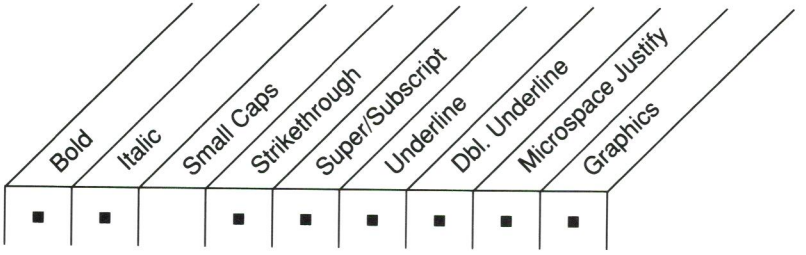
PRD File

CITOHPJR.PRD

Model Information

Model Name:	C.Itoh Prowriter Junior
IBM Graphics Characters:	Yes
Line Drawing Font:	Linedraw
Graphics Resolution (dpi):	60, 120, 240

Printer Features



Font Information

IBM extended characters are available through ASCII 175. Foreign characters can be printed, but characters used for line drawing and paragraph shading are not available.

Fonts	Font sizes
Pica	8, 12, 14, 16
PicaD	8, 12, 14, 16
Elite	10, 15
EliteD	10, 15
PS	12, 16
Linedraw	12

C.Itoh Starwriter FP-1500-45P

The PRD file for this printer is available on the Supplemental Printer Disks.

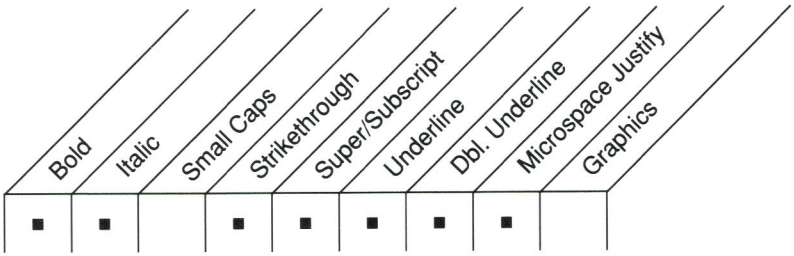
PRD File

CITOHSTR.PRD

Model Information

Model Name:	Starwriter FP-1500-45P
IBM Graphics Characters:	No

Printer Features



Font Information

Italics and font changes require a print wheel change.

Fonts	Font sizes
Pica	12
Courier	12
Elite	10
Prestige	10, 12
LetterGothic	8, 10
OCR-A	12
OCR-B	12
BoldPS	12
Emphasis	12
Kana	10, 12
Hebrew	10

Canon BJ-130 Bubble Jet

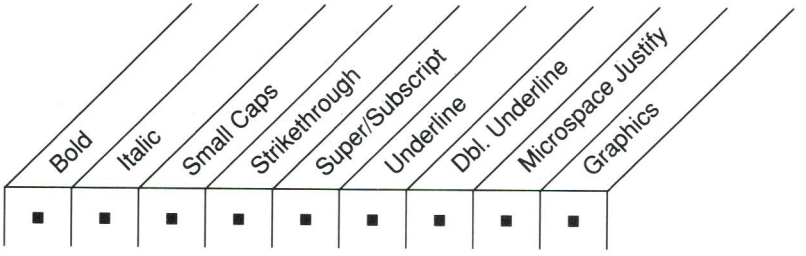
PRD File

CANONBJ.PRD

Model Information

Model Name:	Canon BJ-130 Bubble Jet
Line Drawing Font:	Pica
IBM Graphics Characters:	Yes
Graphics Resolution (dpi):	60, 120, 240
Unprintable Regions:	Top: 0.67, Left: 0.25, Bottom: 0.5, Right: 0.25

Printer Features



Font Information

Underline is substituted for italics.

Fonts	Font sizes
Pica	8, 10, 12, 14, 15, 16
NLQ	8, 10, 12, 14, 15, 16
NLQDblHigh	16, 17
PS	12, 16
PSNLQ	12, 16

Canon LBP-8A1/A2

The PRD files for this printer are available on the Supplemental Printer Disks.

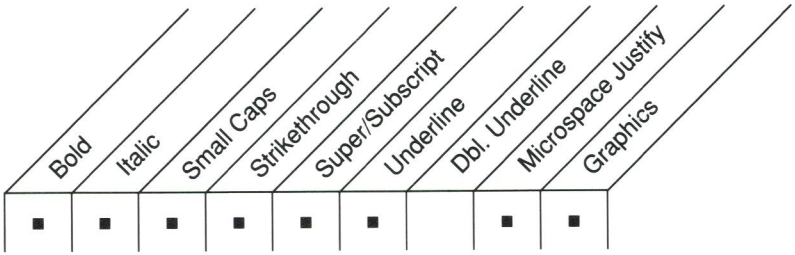
PRD Files

CANON.PRD	Use for portrait mode.
CANON-L.PRD	Use for landscape mode.

Model Information

Model Name:	Canon LBP-8A1/8A2
IBM Graphics Characters:	No
Graphics Resolution (dpi):	75, 150, 300
Unprintable Regions:	Top: 0.17, Left: 0.13, Bottom 0.17, Right: 0.26

Printer Features



Font Information

You must purchase font cartridges to print all fonts except Builtin.

Fonts sizes ending in ".5" are double-high. In these sizes, underline and double underline print through the middle of characters. When creating a border with the Format Border command in these font sizes, add a new line by pressing SHIFT + ENTER after the last line of text.

Bold and italic are not available in sizes 7, 7.5, 8, 8.5, 9, 9.5.

Fonts	Font sizes
Builtin	8, 8.5, 12, 12.5, 14, 14.5, 16, 16.5
Pica	8, 8.5, 12, 12.5, 14, 14.5, 16, 16.5
Elite	8, 8.5, 10, 10.5, 14, 14.5, 15, 15.5
LinePrinter	7, 7.5, 9, 9.5, 11, 11.5, 12, 12.5, 13, 13.5, 16, 16.5
GarlandPS	8, 12

Canon LBP-8II, LBP-8IIR, and LBP-8IIT

If you are using a serial interface to connect this printer, set the system MODE command to: 9600,n,8,1,p

This printer can autorotate fonts.

The LBP-8IIR model has duplex printing capability. When in duplex mode, set paper delivery to "face down" so that pages are ejected to the top tray. Use the Canon LBP-8IIR model name to support the Canon LBP-8IIT printer (the LBP-8IIT does not support duplex printing, however).

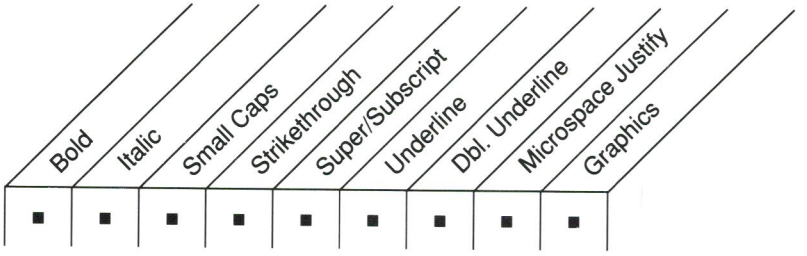
PRD Files

CANON8II.PRD	Use for portrait mode.
CANON8-L.PRD	Use for landscape mode.

Model Information

Model Names:	Canon LBP-8IIR Canon LBP-8II
Line Drawing Font:	Courier
IBM Graphics Characters:	Yes
Graphics Resolution (dpi):	75, 150, 300
Unprintable Regions:	Top: 0.17, Left: 0.13, Bottom: 0.17, Right: 0.26
Bin Support:	Dual-bin sheetfeeder (Canon LBP-8IIR)

Printer Features



Font Information

Courier is an internal font and is also supported on the Courier font cartridge.

Fonts	Font sizes
Courier	8, 9, 12, 13, 16, 17, 24, 25
Pica	8, 9, 12, 13, 16, 17, 24, 25
LinePrinter	6, 7, 8, 9, 12
SWISS721	6, 8, 10, 12, 14, 18, 28
HUMANIST601	8, 10, 12, 14, 18, 28
DUTCH801	8, 10, 12, 14, 18, 28
CENTURY702	8, 10, 12, 14, 18, 28

Citizen MSP-10/15

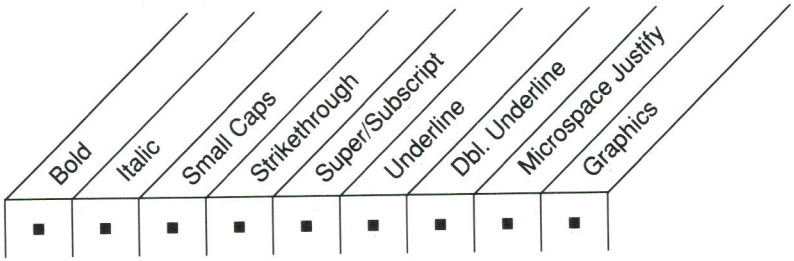
PRD File

CITMSP10.PRD

Model Information

Model Names:	Citizen MSP-10/15
Line Drawing Font:	Pica
IBM Graphics Characters:	Yes
Graphics Resolution (dpi):	60, 120, 240

Printer Features



Font Information

IBM extended characters are available for every font except NLQ. Shading and double line characters are not supported, however.

Fonts	Font sizes
Pica	8, 12, 14, 16
PicaD	8, 12, 14, 16
Elite	10, 15
EliteD	10, 15
NLQ	8, 10, 12, 14, 15, 16

Citizen MSP-50/55

Word does not support "double high mode." Using double high mode creates additional line spacing and throws off page length.

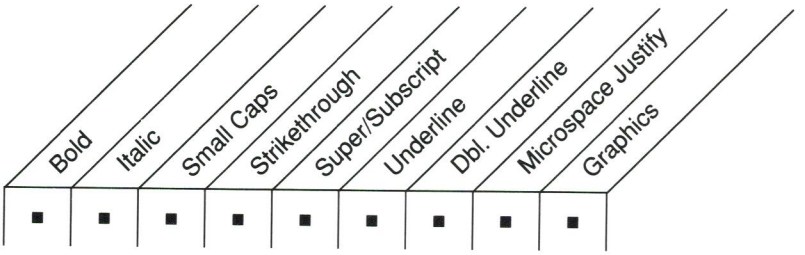
PRD File

CITMSP50.PRD

Model Information

Model Names:	Citizen MSP-50/55 (Color) Citizen MSP-50/55
Line Drawing Font:	Pica
IBM Graphics Characters:	Yes
Graphics Resolution (dpi):	60, 120, 240 non-color model 60, 120 color model

Printer Features



Font Information

Fonts	Font sizes	Notes
Pica	7, 8, 12, 13, 14, 16	Bold not available, sizes 8 and 14
PicaD	7, 8, 12, 13, 14, 16	Bold not available, sizes 8 and 14
Elite	6, 10, 12, 15	
EliteD	6, 10, 12, 15	
NLQ	6, 7, 8, 10, 12, 13, 14, 15, 16	Bold not available, sizes 8 and 14
PS	12, 16	

Cordata LP300/Corona LP300

The PRD file for this printer is available on the Supplemental Printer Disks.

The Cordata LP300 laser printer requires a special board for your computer and special software supplied by the printer manufacturer. To use all the features of this printer, Word needs to work with Cordata's software, version 3.14 or higher.

For more information, see the manual that came with your printer.

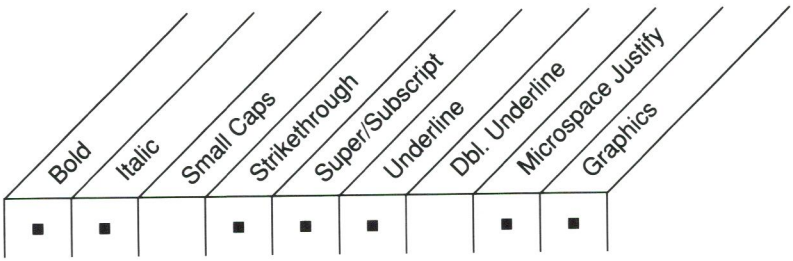
PRD File

CORDATA.PRD Supports the Cordata LP300 and Corona LP300.

Model Information

Model Name: LP300
IBM Graphics Characters: No
Graphics Resolution (dpi): 60, 120
Unprintable Regions: Top: 0.09, Left: 0.25, Bottom: 0.09, Right: 0.25

Printer Features



Font Information

Bold and italic are not available in all fonts. Underline is not supported on the PCSSR or PI fonts.

The PI symbol font supports ASCII characters 65 through 122. In this font, these characters are symbols, not letters.

GothicR and PCSSR can be used for landscape printing.

If you use many fonts to print a document, the printer may run out of memory, and print font control commands instead of the font you specified. If this happens, you need to set aside more memory for font storage. After quitting Word, restart the computer and then run Cordata's LP program and specify the number of bytes you want to set aside. See the manual that came with your printer for more information.

Fonts	Font sizes
COURIER	9, 10
GOTHIC	6, 9
GOTHICR	9
SWISS	6, 8, 10, 12, 14, 18, 20, 24
SWISSO	18
MX	7, 9, 10, 18
MXM	9
PC	6, 7
PCSSR	7
BOOKMANP	9, 12, 18
BOOKMANT	18
KARENA	6, 8, 10, 12, 14, 18, 24
TAYLOR	9, 10
MOMENTO	6, 8, 10, 12, 14, 18, 24
MOMENTO-O	24
MOMENTO-S	24
TEXT	6, 8, 9, 10, 12, 18
CASUAL	10
BANK	10
PI	12
RULE	12

DEC LN03 Laser Printer

The PRD files for this printer are available on the Supplemental Printer Disks.

This printer has two slots for cartridges, which Word selects by using an SGR number. It is not possible to use two cartridges with the same SGR number with Word.

The DEC LN03 laser printer prints up to eight inches of text on a line. The settings in the "left" and "right" fields of the Format Division Margins command should be at least 0.25 inch.

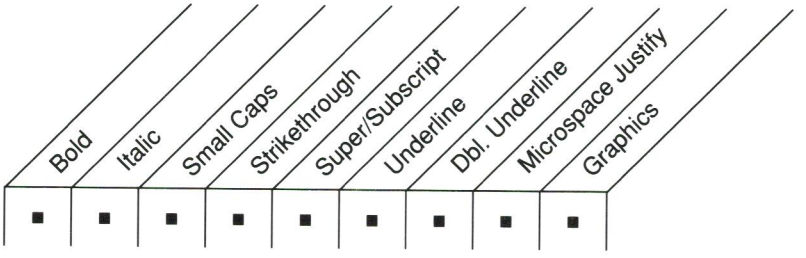
PRD Files

DECLN03.PRD	Use for portrait mode.
DECLN03L.PRD	Use for landscape mode.

Model Information

Model Name:	DEC LN03
IBM Graphics Characters:	No
Graphics Resolution (dpi):	75, 150, 300
Unprintable Regions:	Top: 0.25, Left: 0.25, Bottom: 0.25, Right: 0.25

Printer Features



Font Information

Bold and italic available only where noted.

Fonts	Font sizes	Notes
Builtin	12	
Courier	8, 10, 12	
Elite	10	
Triumvirate	14, 18, 24	Bold size 18 only
CGTimes	8, 10, 12, 14, 18, 24	Bold sizes 10, 12, 18 only; italic size 10 only
Signature	72, 108	
Logo	72, 108	

Diablo 620

The PRD file for this printer is available on the Supplemental Printer Disks.

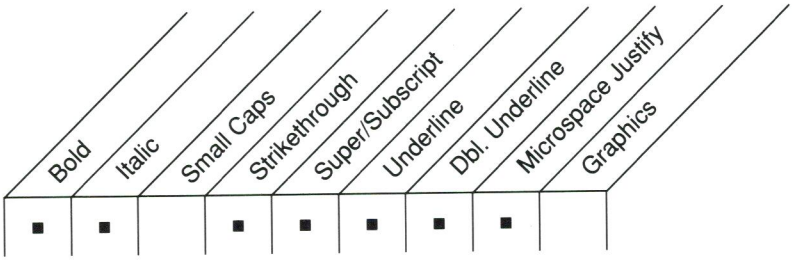
PRD File

D620.PRD

Model Information

Model Name:	Diablo 620
IBM Graphics Characters:	No
Graphics Resolution (dpi):	Graphics not available
Bin Support:	Dual-bin sheetfeeder

Printer Features



Font Information

Italics and font changes require a print wheel change.

Fonts	Font sizes
Pica	12
Courier	12
Elite	10
Prestige	10, 12
LetterGothic	8, 10
GothicPS	12
SquarePS	12
OCR-A	12
OCR-B	12
BoldfacePS	12
ModernPS	12
RomanPS	12
Script	10
Orator	12
Kana	10, 12
Hebrew	10

Diablo 630/630 API/630 ECS

The PRD files for the Diablo 630 API and Diablo 630 ECS are available on the Supplemental Printer Disks.

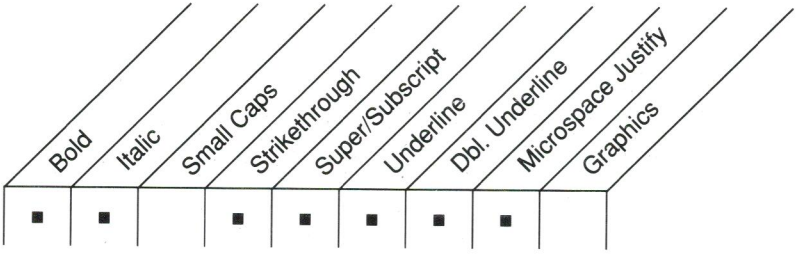
PRD Files

D630.PRD	Use for the Diablo 630.
D630A.PRD	Use for the Diablo 630 API.
D630ECS.PRD	Use for the Diablo 630 ECS.

Model Information

Model Names:	Diablo 630 Diablo 630 API Diablo 630 ECS
IBM Graphics Characters:	No
Graphics Resolution (dpi):	Graphics not available
Bin Support:	Dual bin sheetfeeder

Printer Features



Font Information

Italics and font changes require a print wheel change.

Fonts	Font sizes
Pica	12
Courier	12
Elite	10
Prestige	10, 12
LetterGothic	8, 10
GothicPS	12
CubicPS	12
Titan	10, 12
OCR-A	12
OCR-B	12
BoldPS	12
TrendPS	12
RomanPS	12
Script	10
ScriptPS	12
Narrator	12
Emphasis	12
Kana	10, 12
Hebrew	10

Diablo P32

The PRD file for this printer is available on the Supplemental Printer Disks.

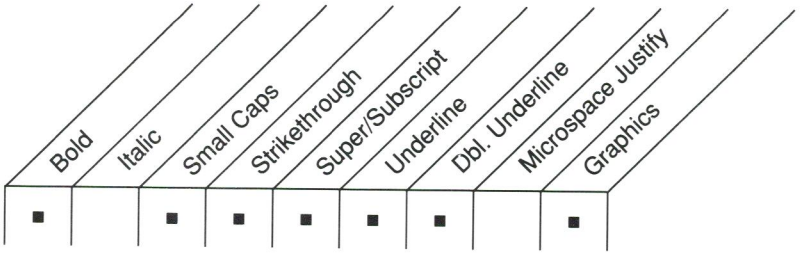
PRD File

DP32.PRD

Model Information

Model Name:	Diablo P32
Line Drawing Font:	Pica
IBM Graphics Characters:	Yes
Graphics Resolution (dpi):	60, 120, 240

Printer Features



Font Information

Bold available only where noted.

Fonts	Font sizes	Notes
Pica	8, 12, 14, 16	Bold sizes 12 and 16 only
PicaD	8, 12, 14, 16	Bold sizes 12 and 16 only
Elite	10, 15	
EliteD	10, 15	
Correspondence	10, 12	

Epson EX-800/1000

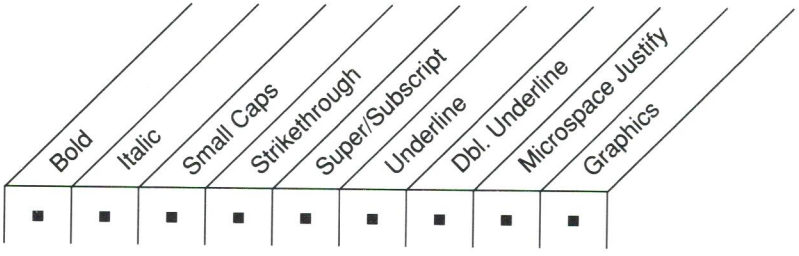
PRD File

EPSONEX.PRD

Model Information

Model Names:	EX-800/1000 Color EX-800/1000
Line Drawing Font:	Pica
IBM Graphics Characters:	Yes
Graphics Resolution (dpi):	60, 120, 240; 240 dpi not available in color model

Printer Features



Font Information

Fonts	Font sizes
Pica	8, 12, 14, 16
PicaD	8, 12, 14, 16
Elite	6, 10, 12, 15
EliteD	6, 10, 12, 15
NLQSansSerif	8, 10, 12, 14, 15, 16
PSSansSerif	12, 16
PSRoman	12, 16
NLQRoman	8, 10, 12, 14, 15, 16

Epson FX Series

Word supports the following FX models: FX-286e, FX-1050, FX-86e, FX-850, FX-286, FX-185, FX-80+, FX-85, FX-80, FX-100, and FX-100+. To take full advantage of your printer's features, make sure the entry in the "model" field in the Print Options command matches the specific FX model you are using.

Word uses a special character translation table to print IBM foreign characters. To use these characters, set your printer's dip switch to enable user-defined characters. If the switch is set incorrectly, printing these characters will cause incorrect line spacing.

Narrow-carriage FX models print to a maximum width of 8 inches. For these printers, the setting in the "right" field of the Format Division Margins command should be at least 0.5 inch.

Microspace justification, used for justified or indented paragraphs, can slow printing speed. To turn off microspace justification and increase printing speed, select Yes in the "draft" field of the Print Options command; or, if you have graphics in your document, use the EPSONFXQ.PRD file (with "draft" set to Yes, graphics do not print; EPSONFXQ.PRD turns off microspace justification and prints graphics).

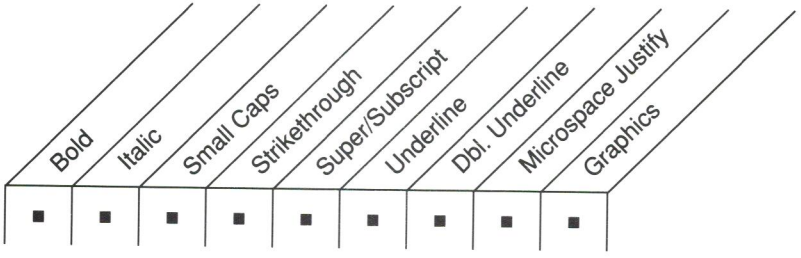
PRD Files

EPSONFX.PRD	Supports microspace justification.
EPSONFXQ.PRD	Does not support microspace justification. Available on Supplemental Printer Disks.

Model Information

Model Names:	FX-286e & FX-1050 FX-86e & FX-850 FX-286 FX-185 FX-80+ & FX-85 FX-80 FX-100 & FX-100+
Line Drawing Font:	Pica
IBM Graphics Characters:	Yes for FX-286e & FX-1050, FX-86e & FX-850
Graphics Resolution (dpi):	60, 120, 240

Printer Features



Font Information

Fonts	Font sizes	Notes
Pica	8, 12, 14, 16	
PicaD	8, 12, 14, 16	
Elite	10, 15	
EliteD	10, 15	
NLQ	12, 16	Not available on FX-100/100+ or FX-80
PS	12, 16	No bold

Epson GQ-3500

The PRD files for this printer are available on the Supplemental Printer Disks. Use a LaserJet PRD file to support the optional Hewlett-Packard LaserJet emulation card; select the LaserJet+ model. Graphics printing is available with LaserJet emulation.

Landscape and portrait modes require different PRD files.

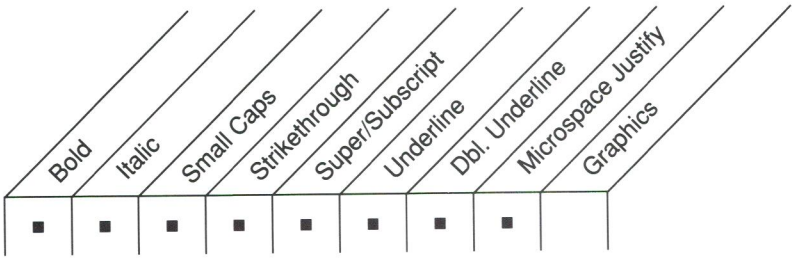
PRD Files

GQ3500P.PRD	Use for portrait mode.
GQ3500L.PRD	Use for landscape mode.

Model Information

Model Names:	GQ-3500 (Portrait) GQ-3500 (Landscape)
Line Drawing Font:	Courier
IBM Graphics Characters:	Yes
Graphics Resolutions (dpi):	Graphics not available except with LaserJet emulation
Bin Support:	Dual-bin sheetfeeder
Unprintable Regions:	Top: 0.25, Left: 0.25, Bottom: 0.25, Right: 0.25

Printer Features



Font Information

Courier, EDP, and ModernPS are built into the printer. Other fonts are available with font cards, which must be purchased separately.

IBM extended characters are not available in Prestige 8, 16, and 24; Prestige italic 10, 20, and 30; LetterGothic 10; LetterGothic italic 12, 24, 30, and 36; and all sizes of EDP.

Underline, double underline, and strikethrough may not reach the end of text in proportional fonts.

Italic is available only in Prestige 10, 20, and 30; LetterGothic; Helv 10, 12, 20, 30, and 36; and TmsRoman 10, 12, 30, and 36. All other fonts and sizes substitute underlining for italic.

Prestige 10 italic and LetterGothic are available in portrait mode only.

Fonts	Font sizes	Notes
Courier	12, 24, 36	
Prestige	8, 10, 16, 20, 24, 30	Requires optional font card
LetterGothic	10, 12, 20, 24, 30, 36	Requires optional font card
EDP	9, 18, 27	
Helv	8, 10, 12, 16, 18, 20, 24, 30, 36	Requires optional font card
ModernPS	12, 24, 36	
TmsRoman	8, 10, 12, 16, 18, 20, 24, 30, 36	Requires optional font card

Epson JX-80

Word uses a special character translation table to print the IBM foreign characters. To use these characters, set your printer's dip switch to enable user-defined characters. If the switch is set incorrectly, printing these characters will cause incorrect line spacing.

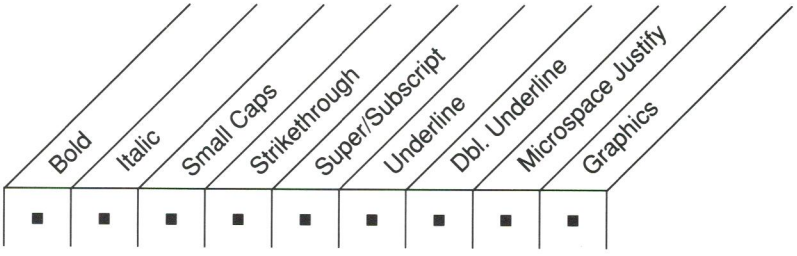
PRD File

EPSONJX.PRD

Model Information

Model Names:	JX-80 Color JX-80
IBM Graphics Characters:	No
Graphics Resolution (dpi):	60, 120, 240; 240 not available on JX-80 Color

Printer Features



Font Information

Fonts	Font sizes
Pica	8, 12, 14, 16
PicaD	8, 12, 14, 16
Elite	10, 15
EliteD	10, 15
PS	12, 16

Epson LQ-500

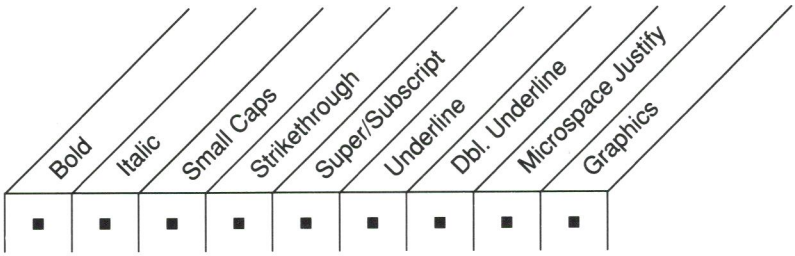
PRD File

EPSONLQ3.PRD

Model Information

Model Names:	Epson LQ-500 Epson LQ-500 (Font Module)
Line Drawing Font:	Pica
IBM Graphics Characters:	Yes
Graphics Resolution (dpi):	60, 180, 360

Printer Features



Font Information

Courier, Prestige, OCR, and Script fonts (including double-strike "D" fonts) are available on a font module, which must be purchased separately.

Fonts	Font sizes
Pica	7, 8, 12, 14, 15, 16, 18, 19, 21, 22, 23, 24
Elite	6, 10, 12, 15, 17, 20, 21, 23
RomanNLQ	6, 7, 8, 10, 12, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24
SansSerifNLQ	6, 7, 8, 10, 12, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24
Courier	10, 12, 15, 16
CourierD	10, 12, 15, 16
Prestige	10, 12, 15, 16
PrestigeD	10, 12, 15, 16
OCR-B	12, 16
OCR-BD	12, 16
RomanPS	12, 16, 21, 24
SanSerifPS	12, 16
Script	10, 12, 15, 16
ScriptD	10, 12, 15, 16
OutlinePica	7, 8, 12, 14, 15, 16, 18, 19, 21, 22, 23, 24
OutlineElite	6, 10, 12, 15, 17, 20, 21, 23
OutlineRomanNLQ	6, 7, 8, 10, 12, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24
OutlineSansSerifNLQ	6, 7, 8, 10, 12, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24
OutlineRomanPS	12, 16, 21, 24
OutlineSanSerifPS	12, 16
ShadowPica	7, 8, 12, 14, 15, 16, 18, 19, 21, 22, 23, 24
ShadowElite	6, 10, 12, 15, 17, 20, 21, 23
ShadowRomanNLQ	6, 7, 8, 10, 12, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24
ShadowSansSerifNLQ	6, 7, 8, 10, 12, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24
ShadowRomanPS	12, 16, 21, 24
ShadowSanSerifPS	12, 16
ShadowOutPica	7, 8, 12, 14, 15, 16, 18, 19, 21, 22, 23, 24
ShadowOutElite	6, 10, 12, 15, 17, 20, 21, 23
ShadowOutRomanNLQ	6, 7, 8, 10, 12, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24
ShadowOutSansSerifNLQ	6, 7, 8, 10, 12, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24
ShadowOutRomanPS	12, 16, 21, 24
ShadowOutSanSerifPS	12, 16

Epson LQ-800/1000

This printer uses the optional Epson Identity Module. Font modules, purchased separately, can be added to support additional fonts.

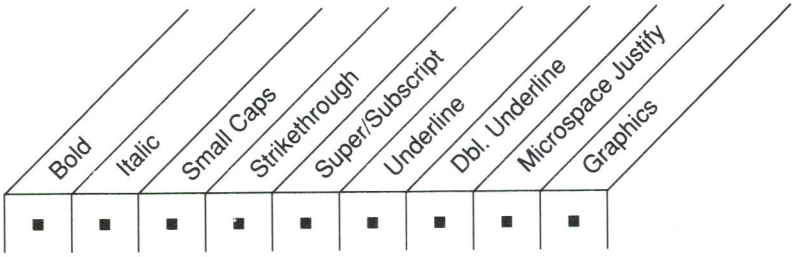
PRD File

EPSONLQ1.PRD

Model Information

Model Names:	LQ-800/1000 LQ-800/1000 (ID module)
Line Drawing Font:	Pica
IBM Graphics Characters:	Yes, LQ-800/1000 (ID module) model only
Graphics Resolution (dpi):	60, 180, 360

Printer Features



Font Information

Fonts	Font sizes	Notes
Pica	7, 8, 12, 14, 15, 16	
PicaD	7, 8, 12, 14, 15, 16	
Courier	10, 12, 15, 16	Requires the Identity font module
CourierD	10, 12, 15, 16	
Elite	6, 10, 12, 15	
EliteD	6, 10, 12, 15	
Prestige	10, 12, 15, 16	Requires the Identity font module
PrestigeD	10, 12, 15, 16	
NLQ	10, 12, 15, 16	
NLQD	10, 12, 15, 16	
SansSerif	10, 12, 15, 16	Requires the Identity font module
SansSerifD	10, 12, 15, 16	Requires the Identity font module
SansSerifPS	12, 16	Requires the Identity font module
SansSerifPSD	12, 16	Requires the Identity font module
OCR-B	12, 16	Requires the Identity font module
OCR-BD	12, 16	Requires the Identity font module
PS	12, 16	
PSD	12, 16	
Script	10, 12, 15, 16	Requires the Identity font module
ScriptD	10, 12, 15, 16	Requires the Identity font module

Epson LQ-850/1050

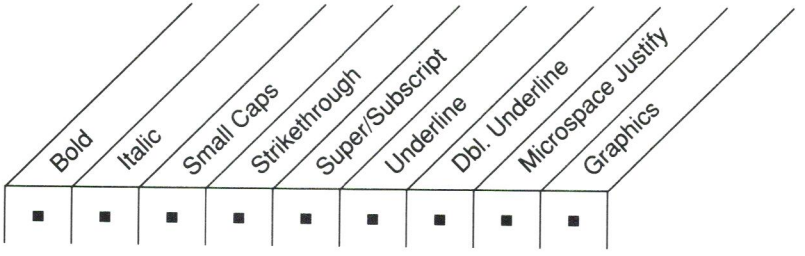
PRD File

EPSONLQ2.PRD

Model Information

Model Names:	LQ-850/1050 LQ-850/1050 (Font Module)
Line Drawing Font:	Pica
IBM Graphics Characters:	Yes
Graphics Resolution (dpi):	60, 180, 360

Printer Features



Font Information

EliteD, Courier, CourierD, Prestige, PrestigeD, OCR-B, OCR-BD, Script, and ScriptD are available only on the LQ-850/1050 (Font Module) model.

Fonts	Font sizes
Pica	7, 8, 12, 14, 15, 16, 18, 19, 21, 22, 23, 24
PicaD	7, 8, 12, 14, 15, 16, 18, 19, 21, 22, 23, 24
Elite	6, 10, 12, 15, 17, 20, 21, 23
EliteD	6, 10, 12, 15, 17, 20, 21, 23
NLQRoman	6, 7, 8, 10, 12, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24
NLQSansSerif	6, 7, 8, 10, 12, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24
PSRoman	12, 16, 21, 24
PSSansSerif	12, 16
Courier	10, 12, 15, 16
CourierD	10, 12, 15, 16
Prestige	10, 12, 15, 16
PrestigeD	10, 12, 15, 16
OCR-B	12, 16
OCR-BD	12, 16
Script	10, 12, 15, 16
ScriptD	10, 12, 15, 16

Epson LQ-1500

Word uses a special character translation table to print IBM foreign characters. Line drawing and shading characters are not available.

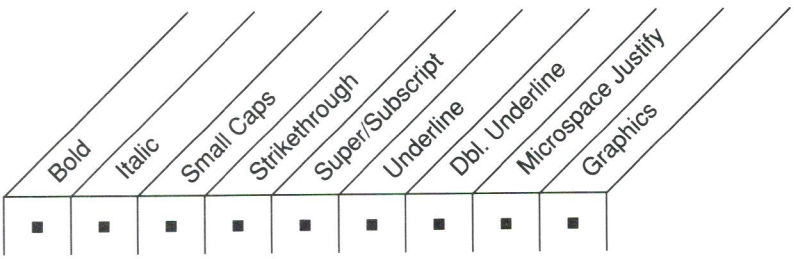
PRD File

EPSONLQ.PRD

Model Information

Model Name:	LQ-1500
IBM Graphics Characters:	No
Graphics Resolution (dpi):	60, 180

Printer Features



Font Information

Fonts	Font sizes
Pica	8, 12, 14, 16
PicaD	8, 12, 14, 16
Elite	6, 10, 12, 15
EliteD	6, 10, 12, 15
NLQ	10, 12, 15, 16
NLQD	10, 12, 15, 16
PS	12, 16
PSD	12, 16

Epson LQ-2500

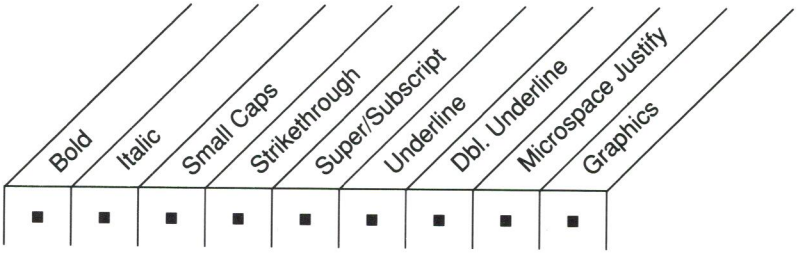
PRD File

LQ2500.PRD

Model Information

Model Names:	LQ-2500 Color LQ-2500
Line Drawing Font:	Pica
IBM Graphics Characters:	Yes
Graphics Resolution (dpi):	60, 180
Bin Support:	Dual-bin sheetfeeder

Printer Features



Font Information

Fonts	Font sizes	Notes
Pica	7, 8, 12, 14, 15, 16	
Courier	10, 12, 15, 16	
Elite	6, 10, 12, 15	
Prestige	10, 12, 15, 16	
NLQ	10, 12, 15, 16	
SansSerif	10, 12, 15, 16	
SanSerifPS	12, 16	
OCR-B	12, 16	Requires an optional font module
PS	12, 16	
Script	10, 12, 15, 16	

Epson LX-80/86

For the Epson LX-80, Word uses a special character translation table to print IBM foreign characters. Line drawing and shading characters are not available.

Narrow-carriage models print to a maximum width of 8 inches. For these printers, the setting in the "right" field of the Format Division Margins command should be set to at least .5 inch.

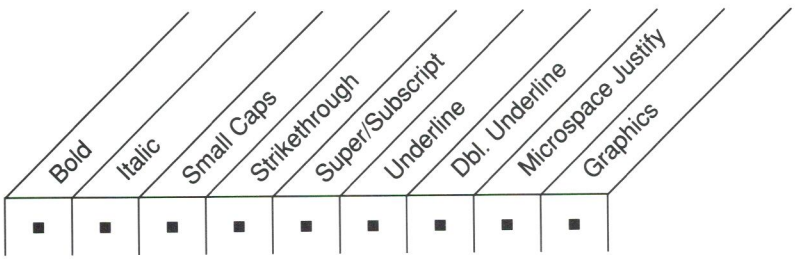
PRD File

EPSONLX.PRD

Model Information

Model Names:	LX-86 LX-80
Line Drawing Font:	Pica
IBM Graphics Characters:	LX-86 only
Graphics Resolution (dpi):	60, 120, 240

Printer Features



Font Information

Justification is not supported with font sizes 7, 8, and 14. Bold is not available with Pica and PicaD, sizes 8 and 14, or Elite and EliteD.

Fonts	Font sizes	Notes
Pica	8, 12, 14, 16	Line drawing font
PicaD	8, 12, 14, 16	
Elite	7, 10, 15	
EliteD	7, 10, 15	
NLQ	12, 16	Italic, super/subscript not available

Epson LX-800

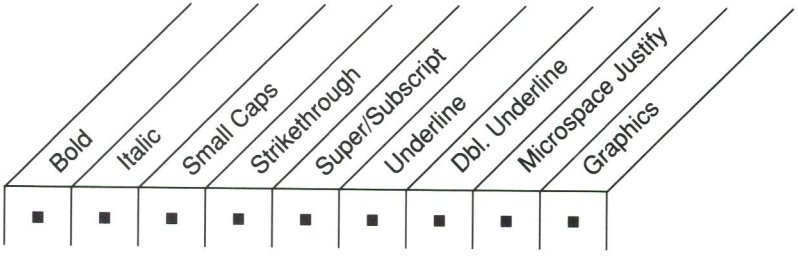
PRD File

EPLX800.PRD

Model Information

Model Name:	LX-800
Line Drawing Font:	Pica
IBM Graphics Characters:	Yes
Graphics Resolution (dpi):	60, 120, 240

Printer Features



Font Information

All fonts support the IBM extended character set.

Fonts	Font sizes	Notes
Pica	8, 12, 14, 16	Bold not available in 8 and 14
PicaD	8, 12, 14, 16	Bold not available in 8 and 14
Elite	6, 10, 12, 15	Bold not available in 6 and 12
EliteD	6, 10, 12, 15	Bold not available in 6 and 12
NLQRoman	10, 12, 15, 16	
NLQSansSerif	10, 12, 15, 16	

Epson MX-80/100 and MX-80/100 with Graftrax/Graftrax Plus

The PRD files for this printer are available on the Supplemental Printer Disks.

Graftrax is the original retrofit kit for the Epson MX. The Graftrax Plus upgrade kit adds bit image graphics.

Narrow-carriage Epson MX-80 printers print to a maximum width of 8 inches. For these printers, the setting in the "right" field of the Format Division Margins command should be set to at least 0.5 inch.

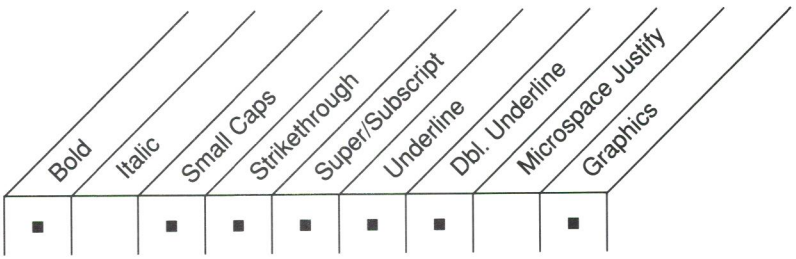
PRD Files

EPSONMX.PRD	Use for the Epson MX-80/100 without Graftrax.
GRAFTRAX.PRD	Use for the Epson MX-80/100 with Graftrax.
EPSONMXG.PRD	Use for the Epson MX-80/100 with Graftrax Plus.

Model Information

Model Names:	MX-80 MX-100 MX-80 w/Graftrax Plus MX-100 w/Graftrax Plus MX-80 w/Graftrax MX-100 w/Graftrax
IBM Graphics Characters:	No
Graphics Resolution (dpi):	60, 120, 240; graphics available with Graftrax Plus only

Printer Features



Font Information

Fonts	Font sizes
Pica	8, 12, 14, 16
PicaD	8, 12, 14, 16

Epson RX-80/100

The narrow-carriage Epson RX-80 prints to a maximum width of 8 inches. For these printers, the "right" field of the Format Division Margins command should be set to at least 0.5 inch.

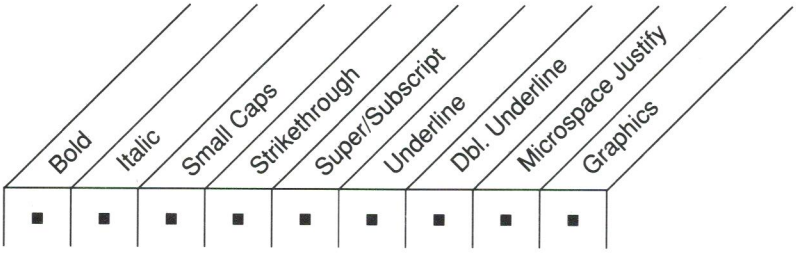
PRD File

EPSONRX.PRD

Model Information

Model Names:	RX-80 RX-100
IBM Graphics Characters:	No
Graphics Resolution (dpi):	60, 120, 240

Printer Features



Font Information

This printer cannot print font sizes 8 and 14 in bold.

Fonts	Font sizes
Pica	8, 12, 14, 16
PicaD	8, 12, 14, 16
Elite	10, 15
EliteD	10, 15

Epson SQ-2000

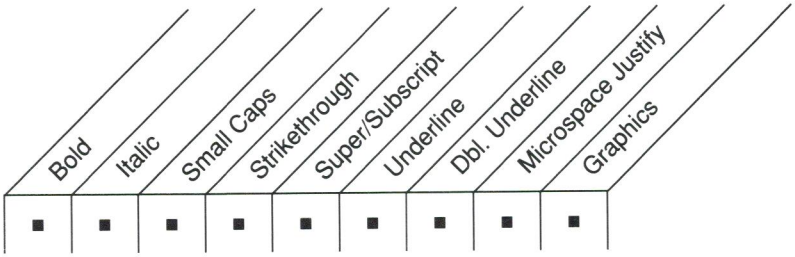
PRD File

EPSONSQ.PRD

Model Information

Model Name:	SQ-2000
IBM Graphics Characters:	No
Graphics Resolution (dpi):	60, 180

Printer Features



Font Information

Fonts	Font sizes
Pica	8, 12, 14, 16
PicaD	8, 12, 14, 16
Elite	6, 10, 12, 15
EliteD	6, 10, 12, 15
NLQ	10, 12, 15, 16
NLQD	10, 12, 15, 16
PS	12, 16
PSD	12, 16

Fujitsu DL2400

The PRD file for this printer is available on the Supplemental Printer Disks.

This printer is supported in DPL24C emulation mode.

Blue, red, green, violet, magenta, yellow, and black are the colors available.

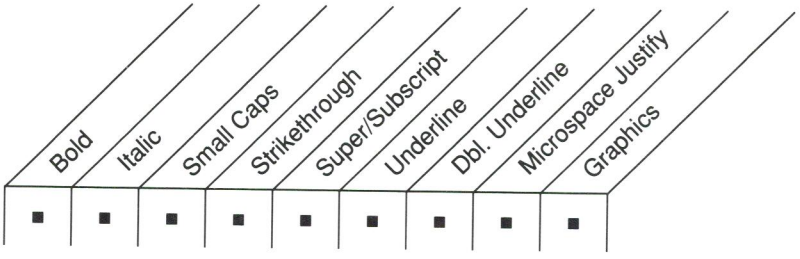
PRD File

FDL2400.PRD

Model Information

Model Name:	Fujitsu DL-2400 Color Fujitsu DL-2400
Line Drawing Font:	Draft
IBM Graphics Characters:	Yes
Graphics Resolution (dpi):	50, 180
Bin Support:	Dual-bin sheetfeeder, envelope feeder

Printer Features



Font Information

Fonts	Font sizes	Notes
Draft	7, 8, 10, 12, 14, 15, 16	
Courier	8, 12, 14, 16	
CourierPS	8, 12, 14, 16	
Prestige	8, 10, 14, 15	
LetterGothic	8, 10, 14, 15	
PrestigePS	8, 10, 14, 15	
LetterGothicPS	8, 10, 12, 15	
Boldface	8, 12, 14, 16	Requires an optional font cartridge
BoldfacePS	8, 12, 14, 16	
LightItalic	8, 12, 14, 16	Requires an optional font cartridge
LightItalicPS	8, 12, 14, 16	
Orator	8, 12, 14, 16	Requires an optional font cartridge
OratorPS	8, 12, 14, 16	
Scientific	8, 10, 14, 15	Requires an optional font cartridge
ScientificPS	8, 10, 12, 15	

Fujitsu DL2600/5600

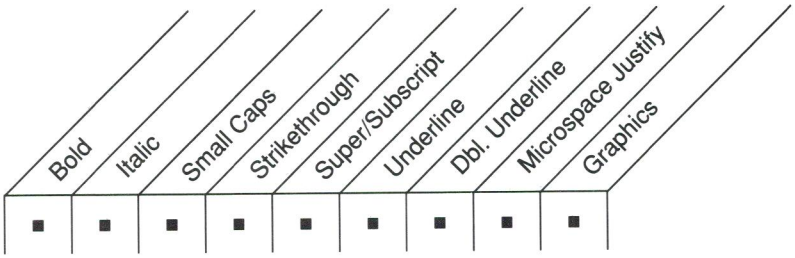
PRD File

FDL2600.PRD

Model Information

Model Names:	Fujitsu DL-2600/5600 Color Fujitsu DL-2600/5600
Line Drawing Font:	Draft
IBM Graphics Characters:	Yes
Graphics Resolution (dpi):	50, 180
Bin Support:	Dual-bin sheetfeeder, envelope feeder

Printer Features



Font Information

Fonts	Font sizes	Notes
Draft	7, 8, 10, 12, 14, 15, 16, 18	
Courier	8, 12, 14, 16, 18	
CourierPS	8, 12, 14, 16, 18	
Prestige	8, 10, 14, 15, 18	
LetterGothic	8, 10, 14, 15, 18	
PrestigePS	8, 10, 14, 15, 18	
LetterGothicPS	8, 10, 12, 15, 18	
Boldface	8, 12, 14, 16, 18	
BoldfacePS	8, 12, 14, 16, 18	
LightItalic	8, 12, 14, 16, 18	Requires an optional font cartridge
LightItalicPS	8, 12, 14, 16, 18	Requires an optional font cartridge
Orator	8, 12, 14, 16, 18	Requires an optional font cartridge
OratorPS	8, 12, 14, 16, 18	Requires an optional font cartridge
Scientific	8, 10, 14, 15, 18	Requires an optional font cartridge
ScientificPS	8, 10, 12, 15, 18	Requires an optional font cartridge

Fujitsu DX-2300/2400

To use Epson emulation, set the printer's inside toggle switch to the "F" position and use FDX2000F.PRD.

To use IBM emulation, set the printer's inside toggle switch to the "I" position and use FDX2000I.PRD.

The IBM Extended Character Set is supported only through ASCII 175. Foreign characters can be printed, but line drawing and paragraph shading are not available.

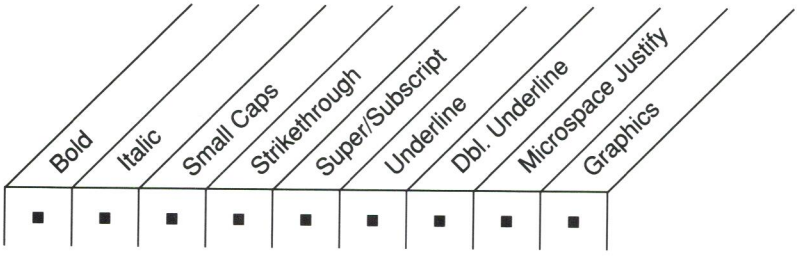
PRD Files

FDX2000F.PRD	Epson and DX 2300F emulation.
FDX2000I.PRD	IBM emulation.

Model Information

Model Names:	Fujitsu DX-2300/2400 Color Fujitsu DX-2300/2400
Line Drawing Font:	Pica (FDX200I.PRD only)
IBM Graphics Characters:	Yes (FDX200I.PRD only)
Graphics Resolution (dpi):	60, 120, 240

Printer Features



Font Information

In Epson emulation, bold is available only in Pica and PicaD, sizes 12 and 16. In IBM emulation, bold is available only in sizes 10, 12, 15, and 16.

Fonts	Font sizes
Pica	7, 8, 10, 12, 13, 14, 15, 16
PicaD	7, 8, 12, 13, 14, 16
Elite	10, 15
EliteD	10, 15
NLQ	10, 12, 15, 16
PS	12, 16

Hewlett-Packard 2934A

The PRD file for this printer is available on the Supplemental Printer Disks.

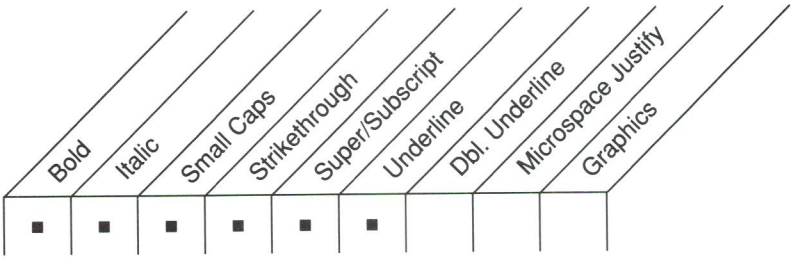
PRD File

HP2934A.PRD

Model Information

Model Name:	HP2934A
IBM Graphics Characters:	No
Graphics Resolution (dpi):	90
Bin Support:	Single-bin sheetfeeder

Printer Features



Font Information

Fonts	Font sizes
Cubic-200	8, 10, 12, 16
Courier-40	10, 12
Courier-200	8, 10, 12, 16
Prestige-40	10, 12
LtrGothic-40	10, 12
LtrGothic-PS	12
Cubic-PS	12
Helv-40	10, 12
Helv-PS	12
Courier-PS	12
OCR-B	12
Prestige-PS	12
Kana	10, 12
Math-Symbols	12
Line-Draw	12

Hewlett-Packard DeskJet 2276A

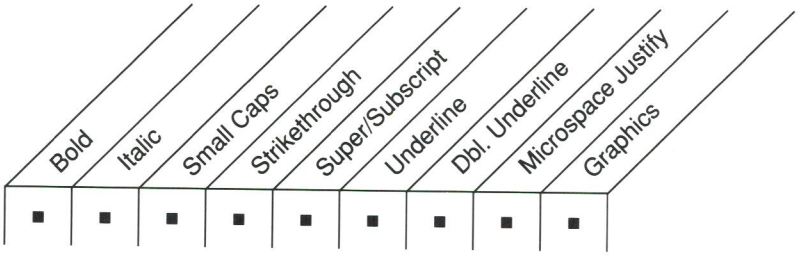
PRD Files

HPDESK1.PRD	Supports internal fonts and cartridges A, B, and C.
HPDESK2.PRD	Supports internal fonts and cartridges D, E, and F.
HPDESK3.PRD	Supports internal fonts and cartridges G, H, and J.
HPDESK4.PRD	Supports internal fonts and cartridges M, P, and Q.

Model Information

Model Names:	HP DeskJet (No Cartridges) HP DeskJet (with specific cartidges)
Line Drawing Font:	Courier
IBM Graphics Characters:	Yes
Graphics Resolution (dpi):	75, 150, 300
Bin Support:	Single-bin sheetfeeder, envelope feeder
Unprintable Regions:	Top: 0.04, Left: 0.25, Bottom: 0.34, Right: 0.25

Printer Features



Font Information

Each PRD file for this printer supports a different set of fonts. Be sure to install the PRD file that supports the fonts you wish to use. See the tables below for specific information. Italics require the use of a 22706A cartridge.

Each DeskJet PRD file has two model names. Select HP DeskJet (No Cartridges) to support internal fonts only. Select the HP DeskJet model with the appropriate cartridges listed in parentheses to support cartridge fonts.

PRD Files	Fonts	Font sizes
HPDESK1.PRD		
	Courier	6, 6.5, 7, 8, 12, 16
	CourierLegal	6, 6.5, 7, 8, 12, 16
	PrestigeElite[B]	5, 5.5, 7, 10, 14, 15
	PrestigeLegal[B]	5, 5.5, 7, 10, 14, 15
	LetterGothic[C]	5, 5.5, 7, 10, 14, 15
	LtrGothicLegal[C]	5, 5.5, 7, 10, 14, 15
	PrestigePiFont[B]	5, 5.5, 7, 10, 14, 15
	Prestige_Math7[B]	5, 5.5, 7, 10, 14, 15
	HP_LineDraw	10, 12
	Prestige_Math8[B]	5, 5.5, 7, 10, 14, 15
HPDESK2.PRD		
	Courier	6, 6.5, 7, 8, 12, 16
	CourierLegal	6, 6.5, 7, 8, 12, 16
	TmsRmn[D/E/F]	4, 5, 6, 7, 8, 10, 12, 14
	TmsRmnLegal[D/E/F]	8, 10, 12, 14
HPDESKJET3.PRD		
	Courier	6, 6.5, 7, 8, 12, 16
	Courier_Legal	6, 6.5, 7, 8, 12, 16
	Helv[G/H/J]	4, 5, 6, 7, 8, 10, 12, 14
	Helv_Legal[G/H/J]	8, 10, 12, 14
HPDESK4.PRD		
	Courier	6, 6.5, 7, 8, 12, 16
	CourierLegal	6, 6.5, 7, 8, 12, 16
	TmsRmn_ASCII[P]	4, 5, 6, 7, 8, 10, 12, 14
	LtrGothic_ASCII[M]	6, 6.5, 12, 16
	Helv_ASCII[Q]	4, 5, 6, 7, 8, 10, 12, 14
	Presentations[M]	7, 7.5, 8, 8.5, 9, 9.5, 14, 16, 18, 24, 30, 36

Hewlett-Packard LaserJet Series

Word supports six LaserJet models: LaserJet 2686A, LaserJet+, LaserJet 500+, LaserJet Series II, LaserJet IID, and LaserJet 2000.

To get full support for the model you use, select its name in the "model" field of the Print Options command.

Built-in, cartridge, and downloadable fonts

LaserJet printers come with some fonts built-in, and you can purchase a wide variety of font cartridges and downloadable fonts as well. Word provides separate PRD files for cartridges and downloadable font sets. Each PRD file also supports Courier 12 and LinePrinter 8.5, which are built into most models.

Using MergePRD to customize PRD files

It's sometimes a good idea to use Word's MergePRD program to customize your LaserJet PRD files. If you use a PRD file that supports fonts or font sizes that aren't available on your cartridge or font set, you can use MergePRD to delete them. That way you can avoid accidentally formatting your text in a font you don't have.

If you would like to use a mixture of downloadable and cartridge fonts in a document, you can use MergePRD to combine support for the fonts in one PRD file. Unless you have a LaserJet 2000 or LaserJet IID, which "rotate" fonts, you can't combine landscape and portrait fonts in a single PRD file.

See Chapter 5, "Using the MergePRD Program," for more information.

LaserJet memory

Printing downloadable fonts and graphics can fill up your printer's memory. If that happens, your document will lose text or print incorrectly. If you're printing a graphic, you can print it at a lower resolution or make it smaller to reduce the amount of printer memory it requires. If you're using downloadable fonts, you can use smaller or fewer fonts, or you can substitute cartridge fonts instead. You can also purchase additional memory for most LaserJet models.

Maximum number of fonts

Most LaserJet models allow no more than 16 fonts per page (see the Model Information section below). Different font sizes and formats are counted as different fonts on a LaserJet. Courier 12, Courier 12 Bold, and Courier 12 italic, for example, are considered three different fonts; and Courier 10, 12, and 14 are also three different fonts. If a page exceeds the printer's font-per-page limit, its formatting will be incorrect.

Word and LaserJet symbol sets

Word's PRD files support several symbol sets (also called character sets) for LaserJet printers. Except where several cartridges are supported on one PRD file, the symbol set or sets supported is noted in each PRD file listing.

Word creates some special fonts to access additional symbol sets. The CourierPC font is identical to regular Courier, but uses the PC-8 symbol set to support Word's line drawing features. Fonts ending in "Legal," such as PrestigeLegal, are identical to fonts without the suffix, but use the Legal character set, which includes copyright, registered trademark, and other symbols.

Word does not always support every symbol set available. You can access unsupported symbol sets by modifying your PRD file.

Line drawing

Generally, lines drawn with Word's line draw feature should be formatted with the CourierPC or Linedraw fonts. If you don't have one of these fonts, or a font that uses the PC-8 symbol set, you may not be able to take full advantage of the line draw or Format Border features.

Unprintable regions

Like other laser printers, LaserJet printers cannot print all the way to the edge of a page. The area around the edge of a page where the printer cannot print is called an unprintable region. The sizes of the unprintable regions for different LaserJet models are included in the Model Information tables below.

In Word 4.0 and earlier versions, you had to adjust the margins and page length settings in the Format Division Margins command to accommodate unprintable regions. You do not have to do so in Word 5.0. You should select the exact margins you want and the actual page dimensions.

Paper feed

The "paper feed" field of the Print Options command should normally be set to Continuous. However, if you have a LaserJet 500 Plus, LaserJet IID, or LaserJet 2000, you can select different paper trays or an envelope feeder. If you select mixed, the first page will feed from bin 1 and succeeding pages will feed from bin 2.

Downloading fonts

To use downloadable fonts with Word's downloading program, you must place the appropriate PRD file, a DAT file with the same filename as the PRD file, and the font set files in the same directory (or on the same floppy disk). The DAT file is automatically copied with the PRD file if you use Setup to install your printer driver. See Chapter 4, "Downloading Fonts," for additional information on downloading LaserJet fonts.

Landscape printing

Word uses separate PRD files to support landscape fonts. To print in landscape mode (sideways across a page) reverse the "page length" and "width" settings in the Format Division Margins command and select the PRD file that supports the landscape fonts you wish to print. The LaserJet IID and LaserJet 2000 models support autorotation, which allows them to print portrait fonts in landscape orientation; you do not need a landscape PRD file to print in landscape mode with these models.

Model Information

LaserJet 2686A (Original)

Internal Fonts:	Portrait and Landscape Courier 12
Font Cartridges:	One font cartridge slot
Downloadable Fonts:	Does not support downloadable fonts
Graphics Resolution (dpi):	75, 150
Max. Num. of Fonts per Page:	8
Memory:	128K
Unprintable Regions (inches):	Top: 0.25, Bottom: 0.25, Left: 0.16, Right: 0.32
Bin Support:	One tray

LaserJet +

Internal Fonts:	Portrait and Landscape Courier 12; portrait only LinePrinter 8.5
Font Cartridges:	One font cartridge slot
Downloadable Fonts:	Yes
Graphics Resolution (dpi):	75, 150, 300
Max. Num. of Fonts per Page:	16
Memory:	512K standard
Unprintable Regions (inches):	Top: 0.25, Bottom: 0.25, Left: 0.16, Right: 0.32
Bin Support:	One tray

LaserJet 500 +

Internal Fonts:	Portrait and Landscape Courier 12; portrait only LinePrinter 8.5
Font Cartridges:	Two font cartridge slots
Downloadable Fonts:	Yes
Graphics Resolution (dpi):	75, 150, 300
Max. Num. of Fonts per Page:	16
Memory:	512K standard; can be increased to 2 MB
Unprintable Regions (inches):	Top: 0.25, Bottom: 0.25, Left: 0.16, Right: 0.32
Bin Support:	Two trays

LaserJet Series II

Internal Fonts:	Portrait and Landscape Courier 12; portrait and landscape LinePrinter 8.5
Font Cartridges:	Two font cartridge slots
Downloadable Fonts:	Yes
Graphics Resolution (dpi):	75, 150, 300
Max. Num. of Fonts per Page:	16
Memory:	512K standard; can be increased to 4.5 MB
Unprintable Regions (inches):	Top: 0.20, Bottom: 0.20, Left: 0.17, Right: 0.33
Bin Support:	One bin

LaserJet IID

Font autorotation and duplex printing available. When duplex printing, set paper delivery to "face down."

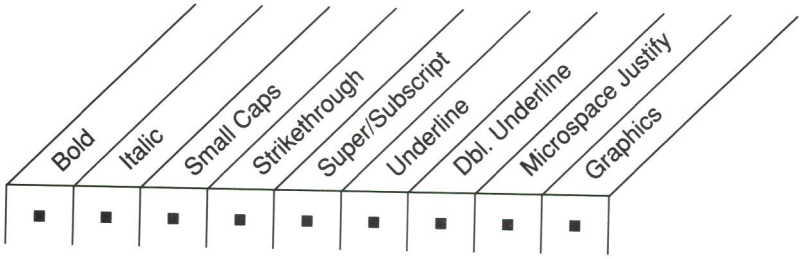
Internal Fonts:	Portrait and Landscape Courier 10, 12; portrait and landscape Lineprinter 8.5
Font Cartridges:	Two font cartridge slots
Downloadable Fonts:	Yes
Graphics Resolution (dpi):	75, 150, 300
Max. Num. of Fonts per Page:	Unlimited
Memory:	512K standard; can be increased to 4.5 MB
Unprintable Regions (inches):	Top: 0.20, Bottom: 0.20, Left: 0.17, Right: 0.33
Bin Support:	Two trays; envelope feeder

LaserJet 2000

Font autorotation and duplex printing available. Use HPLASER.PRD to support internal fonts.

Internal Fonts:	Portrait and Landscape Courier 10, 12; portrait and landscape Lineprinter 8.5,; portrait and landscape Prestige Elite 7, 10; portrait and landscape 8, 10; portrait and landscape Helv 14; portrait and landscape 8.5, 12
Font Cartridges:	Three font cartridge slots
Downloadable Fonts:	Yes
Graphics Resolution (dpi):	75, 150, 300
Max. Num. of Fonts per Page:	16
Memory:	512K standard; can be increased to 5.5 MB
Unprintable Regions (inches):	Top: 0.17, Bottom: 0.17, Left: 0.17, Right: 0.17
Bin Support:	Three trays; envelope feeder

Printer Features



PRD File and Font Information

Word supports the following font cartridges:

A, B, C, D, E, F, G, H, J, K, L, M, N, P, Q, R, S1, S2, T, U, V, W, X, Y, and Z.

Word supports the following downloadable font sets:

AC, AD, AE, AF, AG, DA, EA, RA, RB, SA, SB, TA, TB, UA, and UB.

PRD files that support the AC and AD font sets are supplied with the package you receive when you purchase Word. PRD files for the other downloadable font sets are available on the Supplemental Printer Disks. For information on obtaining Supplemental Printer Disks, see the introduction to this chapter. Word comes with one PRD file, HPLASER.PRD, used just to support internal fonts.

Word's other LaserJet PRD files are organized into three categories:

- PRD files to support cartridge fonts in portrait mode (normal printing, top to bottom on a page).
- PRD files to support cartridge fonts in landscape mode (sideways printing). Landscape mode is useful for printing envelopes, wide documents, or tables more than 8 inches wide.
- PRD files that support downloadable font sets. Separate PRD files support portrait and landscape downloadable fonts.

Some PRD files support more than one cartridge or font set. You can print only those fonts for which you have a cartridge installed in your printer. If you try to print a font that is not on a cartridge installed in your printer, the printer will substitute one of its internal fonts or one of the fonts available on the cartridge that is installed.

On PRD files which support more than one cartridge, font names include in brackets the cartridges which support them. For example, Prestige[D/H/J/M] means that the Prestige font is supported on the D, H, J, and M cartridges.

The LaserJet internal fonts that Word's PRD files support are not available on every LaserJet model. If an internal font is not supported, it will not be listed when you press F1 in the "font name" field of the Format Character command.

The original LaserJet and LaserJet Plus models do not have an internal PC-8 extended character set. As a result, the CourierPC font, created to access the PC-8 set, is unavailable on those models.

Internal Font PRD File

PRD File	Fonts	Font sizes
HPLASER.PRD		
Portrait	Courier	12
	CourierPC	12
	Prestige	7, 10
	LinePrinter	8.5
	HELV	14
	TMSRMN	8, 10
	LineDraw	10, 12

Portrait Cartridge PRD Files

PRD Files	Fonts	Font sizes
HPLASER1.PRD		
Portrait	Courier	12
	CourierLegal[H]	12
Cartridges:	PrestigeLegal[G]	7, 10
A, B, C, D, E, G, H,	Prestige[D/H/J/M]	7, 10
J, L, Q, W, X	LetterGothic[E/N/Q/W/X]	9.5, 10, 14
	CourierPC	12
	LinePrinter	8.5
	HELV[B]	14
	OCR-A[W]	12
	OCR-B[X]	12
	TMSRMN[B]	8, 10
	Danish/Norwegian[C]	12
	UnitedKingdom[C]	12
	French[C]	12
	German[C]	12
	Italian[C]	12
	Swedish/Finnish[C]	12
	Spanish[C]	12
	PiFont[J]	10
	LineDraw[G/H/W/X]	10, 12
	Math7[J]	10
	Math8[J]	7, 10
	Bar3of9[W]	12, 13
	EAN/UPC[X]	12

(continued)

PRD Files	Fonts	Font sizes
HPLASER2.PRD		
Portrait	Courier	12
	CourierPC	12
Cartridges:	LetterGothic[R/U]	8, 14
F, K, P, R, U	LetterGothicLegal[R]	14
	LinePrinter	8.5
	HELV[F/U]	6, 8, 10, 12, 14, 15
	Presentation[R]	14, 16, 18
	PresentationLegal[R]	14, 16, 18
	TMSRMN[F/K/P]	8, 10
	PiFont[K]	10
	LineDraw[R/U]	12, 14
	Math7[K]	10
	Math8[K]	8, 10
	PCLine[R]	14
HPLASER3.PRD		
Portrait	Courier	12
	CourierPC	12
Cartridges:	Prestige[J]	7, 10
J, R, and Z	LetterGothic[R]	14
	LetterGothicLegal[R]	14
	LinePrinter	8.5
	HELV[Z]	8, 10, 12, 14
	Presentation[R]	14, 16, 18
	PresentationLegal[R]	14, 16, 18
	TMSRMN[Z]	8, 10, 12, 14
	PiFont[J]	10
	LineDraw[R]	14
	Math7[J]	10
	Math8[J]	7, 10
	PCLine[R]	14
HPLASPS.PRD		
Portrait	Courier	12
	CourierPC	12
Cartridge: B	LinePrinter	8.5
(US ASCII	HELV	14
symbol set)	TMSRMN	8, 10
HPLASRMN.PRD		
Portrait	Courier	12
	CourierPC	12
Cartridge: F	LinePrinter	8.5
(Roman 8	HELV	14
symbol set)	TMSRMN	8, 10

(continued)

PRD Files	Fonts	Font sizes
HPLAS2S1.PRD		
Portrait	Courier	10, 12
	LinePrinter	8.5
Cartridge: S1 (PC-8 symbol set)		
HPLAS2S2.PRD		
Portrait	Courier	10, 12
	LinePrinter	8.5
Cartridge: S2	Helv	14
	TmsRmn	8, 12
(PC-8 symbol set)		
HPLASTAX.PRD		
Portrait	Courier	12
	CourierPC	12
Cartridge: T	Lineprinter	8.5
(ASCII and	HELV	6, 8, 10, 12, 14
Linedraw symbol sets)	LineDraw	12
HPPCCOUR.PRD		
Portrait	Courier	12
	CourierPC	12
Cartridge: Y	LinePrinter	8.5
(PC Set 1 symbol set)		
HPLASMS.PRD		
Portrait	Courier	12
	CourierPC	12
Cartridge: Z	LinePrinter	8.5
Microsoft 1	HELV	8, 10, 12, 14
(ECMA symbol set)	TMSRMN	8, 10, 12, 14
HPLASMS2.PRD		
Portrait	Courier	12
	CourierPC	12
Cartridge: Z	LinePrinter	8.5
Microsoft 1A	HELV	8, 10, 12, 14
(Roman 8 symbol set)	TMSRMN	8, 10, 12, 14

(continued)

PRD Files	Fonts	Font sizes
HPLASMSA.PRD		
Portrait	Courier	12
	CourierPC	12
Cartridge: Z	LinePrinter	8.5
Microsoft 1A	HELV_ASCII	8, 10, 12, 14
(ASCII	TMSRMN_ASCII	8, 10, 12, 14
symbol set)		

Landscape Cartridge PRD Files

PRD Files	Fonts	Font sizes
HPLASLAN.PRD		
Landscape	Courier	12
	CourierPC	12
Cartridges:	Prestige[G/H/M]	7, 10
A, B, C, G, H, L, M,	LetterGothic[N/Q/R/V]	8, 10, 14
N, P, Q, R, U, V	LetterGothicLegal[R]	14
	LinePrinter	8.5
	HELV[V]	6, 8, 10, 12, 14
	Presentation[R]	14, 16, 18
	PresentationLegal[R]	14, 16, 18
	TMSRMN[P]	10
	LineDraw[R/V]	12, 14
	PCLine[R]	14
HPLASMSL.PRD		
Landscape	Courier	12
	CourierPC	12
Cartridge: Z	LinePrinter	8.5
(Roman 8		
symbol set)		

Downloadable Font PRD Files

PRD Files	Fonts	Font sizes
HPDWNACP.PRD		
Portrait	Courier	12
AC Font Set	CourierPC	12
TmsRmn/Helv base font	LinePrinter	8.5
ASCII symbol set	HELV	6, 8, 10, 12, 14, 18, 24, 30
	TMSRMN	6, 8, 10, 12, 14, 18, 24, 30

(continued)

PRD Files	Fonts	Font sizes
HPDWNACL.PRD Landscape AC Font Set Tms/Helv font base ASCII symbol set	(Same as HPDWNACP.PRD)	
HPDWNADP.PRD Portrait AD Font Set Tms/Helv base font Roman 8 symbol set	(Same as HPDWNACP.PRD)	
HPDWNADL.PRD Landscape AD Font Set Tms/Helv base font Roman 8 symbol set	(Same as HPDWNACP.PRD)	
HPDWNSFL.PRD (PRD File on Supplemental Printer Disks) Landscape AC and AE Font Set ASCII symbol set	Courier CourierPC LinePrinter HELV TMSRMN	12 12 8.5 6, 7, 8, 9, 10, 11, 12, 14, 18, 24, 30 6, 7, 8, 9, 10, 11, 12, 14, 18, 24, 30
HPDWNSFP.PRD (PRD File on Supplemental Printer Disks) Portrait AC and AE Font Sets ASCII symbol set	(Same fonts and sizes as HPDWNSFL.PRD)	

(continued)

PRD Files	Fonts	Font sizes
HPDWNR8L.PRD (PRD File on Supplemental Printer Disks)		
Landscape	Courier	12
	CourierPC	12
AD and AF Font Sets	LinePrinter	8.5
TmsRmn/Helv, base and supplemental fonts	HELV	6, 7, 8, 9, 10, 11, 12, 14, 18, 24, 30
Roman 8 symbol set	TMSRMN	6, 7, 8, 9, 10, 11, 12, 14, 18, 24, 30
HPDWNR8P.PRD (PRD File on Supplemental Printer Disks)	(Same fonts and sizes as HPDWNR8L.PRD)	
Portrait		
AD and AF Font Sets		
Roman 8 symbol set		
HPDWNHHP.PRD (PRD File on Supplemental Printer Disks)		
Portrait	Courier	12
AG Font Set	CourierPC	12
Helve Headline, base font	LinePrinter	8.5
Roman 8 symbol set	HelvCondensed	14, 18, 24, 30, 36, 48
	HelvOutline	14, 18, 24, 30, 36, 48
	Serifa	14, 18, 24, 30, 36, 48
HPDWNLGL.PRD (PRD File on Supplemental Printer Disks)		
Landscape	Courier	12
DA Font Set	CourierPC	12
Letter Gothic, base font	LetterGothic	9.5, 12, 14
Several symbol sets	LetterGothicLegal	9.5, 12, 14
	LinePrinter	8.5
	Presentation	14, 16, 18, 24, 30
	PresentationLegal	14, 16, 18, 24, 30
	PiFont	12
	LineDraw	9.5, 12, 14, 16, 18
	Math7	12
	Math8	9.5, 12
	PCLine	9.5, 12, 14, 16, 18

(continued)

PRD Files	Fonts	Font sizes
HPDWNLGP.PRD (PRD File on Supplemental Printer Disks) Portrait DA Font Set Several symbol sets	(Same fonts and sizes as HPDWNLGL.PRD)	
HPDWNPRL.PRD (PRD File on Supplemental Printer Disks) Landscape EA Font Set Prestige Elite Family Several symbol sets	Courier CourierPC Prestige PrestigeLegal LinePrinter PiFont LineDraw Math7 Math8 PCLine	12 12 7, 10 7, 10 8.5 10 12 10 7, 10 12
HPDWNPRP.PRD (PRD File on Supplemental Printer Disks) EA Portrait Font Set Prestige Elite Family	(Same fonts and sizes as HPDWNPRL.PRD)	
HPDWNGAP.PRD (PRD File on Supplemental Printer Disks) Portrait RA Font Set ITC Garamond ASCII symbol set	Courier CourierPC LinePrinter Garamond	12 12 8.5 6, 7, 8, 9, 10, 11, 12, 14, 18, 24, 30
HPDWNGA8.PRD (PRD File on Supplemental Printer Disks) Portrait RB Font Set ITC Garamond Roman 8 symbol set	(Same fonts and sizes as HPDWNGAP.PRD)	

(continued)

PRD Files	Fonts	Font sizes
HPDWNCNP.PRD (PRD File on Supplemental Printer Disks)		
Portrait	Courier	12
SA Font Set	CourierPC	12
Century Schoolbook	LinePrinter	8.5
ASCII symbol set	CenturySchlbook	6, 7, 8, 9, 10, 11, 12, 14, 18, 24, 30
HPDWNCN8.PRD (PRD File on Supplemental Printer Disks)	(Same fonts and sizes as HPDWNCNP.PRD)	
Portrait		
SB Font Set		
Century Schoolbook		
Roman 8 symbol set		
HPDWNZHP.PRD (PRD File on Supplemental Printer Disks)		
Portrait	Courier	12
TA Font Set	CourierPC	12
Zapft Humanist	LinePrinter	8.5
ASCII symbol set	ZapfHumanist	6, 7, 8, 9, 10, 11, 12, 14, 18, 24, 30
HPDWNZH8.PRD (PRD File on Supplemental Printer Disks)	(Same fonts and sizes as HPDWNZHP.PRD)	
Portrait		
TB Font Set		
Zapft Humanist		
Roman 8 symbol set		
HPDWNHLP.PRD (PRD File on Supplemental Printer Disks)		
Portrait	Courier	12
UA Font Set	CourierPC	12
Headline Typeface Collection	LinePrinter	8.5
ASCII symbol set	Broadway	14, 18, 24, 30
	Bodini	14, 18, 24, 30
	University	14, 18, 24, 30
	Coronet	14, 18, 24, 30
	Cooper	14, 18, 24, 30

(continued)

PRD Files	Fonts	Font sizes
HPDWNHL8.PRD (PRD File on Supplemental Printer Disks)		
Portrait	Courier	12
UB Font Set	CourierPC	12
Headline Typeface Collection	LinePrinter	8.5
Roman 8 symbol set	Broadway	14, 18, 24, 30
	BauerBodiniCond	14, 18, 24, 30
	University Roman	14, 18, 24, 30
	Coronet	14, 18, 24, 30
	Cooper Black	14, 18, 24, 30

Hewlett-Packard PaintJet

The PC-8/ROM8 dip switch on the printer should be set to PC-8 to print IBM graphics characters.

What Word calls blue (in the "color" field of the Format Character command), the printer calls cyan. What Word calls violet, the printer calls blue.

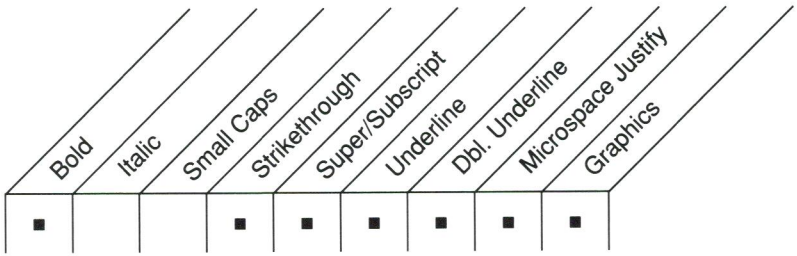
PRD File

HPPAINT.PRD

Model Information

Model Name:	HP PaintJet
Line Drawing Font:	Courier
IBM Graphics Characters:	Yes
Graphics Resolution (dpi):	180

Printer Features



Font Information

Underline is substituted for italic in all fonts.

LetterGothic supports IBM extended foreign characters (ASCII numbers 128–175).

Fonts	Font sizes
Courier	12
LetterGothic	7, 10

Hewlett-Packard QuietJet Plus

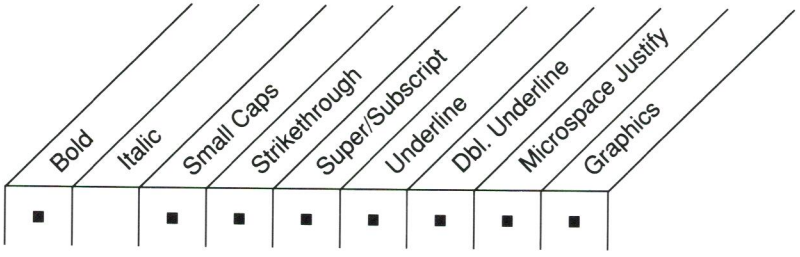
PRD File

HPQUIET.PRD

Model Information

Model Name:	HP QuietJet
Line Drawing Font:	Pica
IBM Graphics Characters:	Yes
Graphics Resolution (dpi):	96, 192

Printer Features



Bold	Italic	Small Caps	Strikethrough	Super/Subscript	Underline	Dbl. Underline	Microspace Justify	Graphics
■		■	■	■	■	■	■	■

Font Information

Underline is substituted for italic.

Fonts	Font sizes
Pica	8, 10, 11, 12, 15, 16
NLQ	10, 12, 15, 16

Hewlett-Packard ThinkJet

The PRD file for this printer is available on the Supplemental Printer Disks.

Word supports this printer in Epson emulation mode.

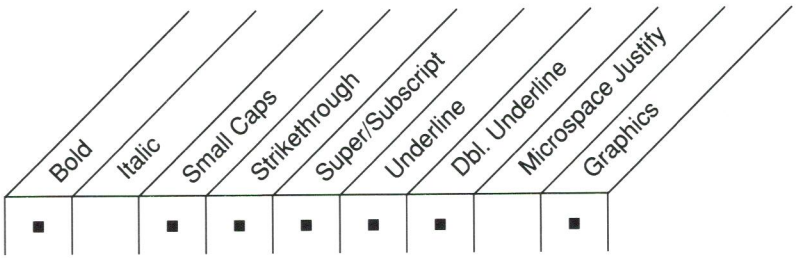
PRD File

HPTHINK.PRD

Model Information

Model Name:	HP ThinkJet
IBM Graphics Characters:	No
Graphics Resolution (dpi):	96, 192

Printer Features



Font Information

Fonts	Font sizes
Pica	8, 12, 14, 16

IBM Color Inkjet

The PRD files for this printer are available on the Supplemental Printer Disks.

What Word calls blue (in the "color" field of the Format Character command), the printer calls cyan. What Word calls violet, the printer calls blue.

Graphics are not supported with IBMCLRLQ.PRD. When using IBMCOLOR.PRD, do not flow text around graphics.

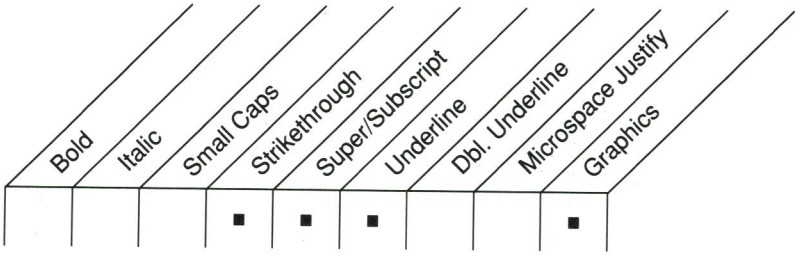
PRD Files

IBMCOLOR.PRD	Use for draft-quality output.
IBMCLRLQ.PRD	Use for near-letter-quality.

Model Information

Model Name:	IBM Color Inkjet
Line Drawing Font:	Pica
IBM Graphics Characters:	Yes
Graphics Resolution (dpi):	100

Printer Features



Font Information

Microspace justification is not supported for sizes 8 and 14.

Fonts	Font sizes	Notes
Pica	8, 12, 14, 16	No super/subscript
PicaD	8, 12, 14, 16	

IBM Graphics Printer

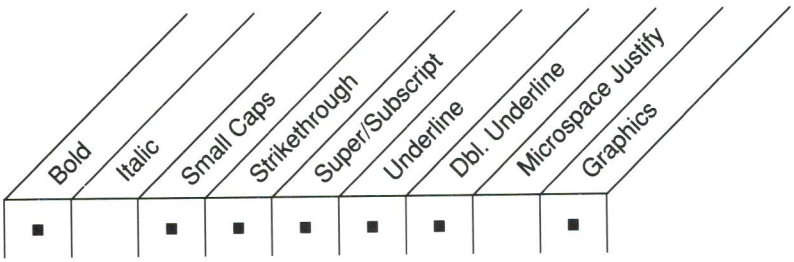
PRD File

IBMGRAPH.PRD

Model Information

Model Name:	IBM Graphics Printer
Line Drawing Font:	Pica
IBM Graphics Characters:	Yes
Graphics Resolution (dpi):	60, 120, 240

Printer Features



Font Information

Underline is substituted for italic.

Fonts	Font sizes
Pica	8, 12, 14, 16
PicaD	8, 12, 14, 16

IBM Pageprinter (3812)

Due to the number of fonts available, several PRD files are available for the printer. Each PRD file supports a different set of fonts.

If you use PAGEDL.PRD, you must have the PAGEDL.DAT file in the same directory or on the same disk. The DAT file is copied automatically if you use Setup to install your PRD file.

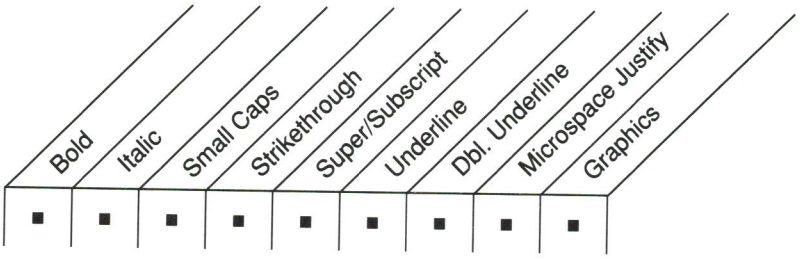
PRD Files

PAGEDL.PRD	Contains all the fonts from the four PRD files listed below. Uses Word's downloading program.
PAGEMDRN.PRD	
PAGERMN.PRD	
PAGEPS.PRD	
PAGESNRN.PRD	

Model Information

Model Name:	IBM Pageprinter (3812)
Line Drawing Font:	Gothic, except for PAGEMDRN.PRD, which uses Courier
IBM Graphics Characters:	Yes
Graphics Resolution (dpi):	60, 120, 240
Bin Support:	Bins 1-2
Unprintable Regions:	Top: 0, Left: 0.25, Bottom: 0, Right: 0

Printer Features



Font Information

Fonts are supplied on disks. Word supports only those fonts on the disks that come with the printer.

If you use the PAGEMDRN.PRD, PAGERMN.PRD, PAGEPS.PRD or PAGESNRN.PRD files fonts are loaded from the printer's internal disk automatically using the printer's downloading software, without prompting you (PAGEDL.PRD works differently; see the paragraph below). Most fonts are loaded from disk into memory when you start to print. The exceptions are the very large and very small font sizes. These fonts are loaded dynamically — when the printer needs to change fonts, the font currently loaded is unloaded and the new font is loaded. Using these fonts can slow printing considerably.

PAGEDL.PRD uses Word's internal downloading program to load fonts from disk. PAGEDL.PRD can help to make printing quicker if you use the same group of fonts each time you print. With this PRD file, you are prompted to download each time you print. If you have already downloaded the fonts you need, you can skip downloading and improve printing speed. For more information, see Chapter 4, "Downloading Fonts."

If you use many fonts with PAGEDL.PRD, the printer may run out of memory and print graphics blocks instead of text. If this occurs, reformat your document using fewer fonts and try printing again.

Bold and italic are available only where noted.

PRD files	Fonts	Font sizes
PAGEMDRN.PRD (Italic and bold available Courier 12, Prestige 10; bold only Courier 16)	Courier	8, 10, 12, 16
	Prestige	10, 12
	Roman-text	12
	Kana	12
	Orator	12
	Math-symbol	10, 12

(continued)

PRD files	Fonts	Font sizes
PAGERMN.PRD		
(Italic and bold Gothic-text 10, Serif-text 10; bold only, Gothic-text 12, LetterGothic; italic only Serif-text 12)	Gothic-text	7, 8, 10, 12
	LetterGothic	10
	Serif-text	8, 10, 12
	Kana	12
	Orator	12
	Math-symbol	10, 12
PAGEPS.PRD		
(Italic and bold EssayPS; italic only BoldfacePS)	Gothic-text	12
	EssayPS	12
	BoldfacePS	12
	DocumentPS	12
	Kana	12
	Shalom	8, 10, 12
	BarakPS	12
	Orator	12
	Math-symbol	10, 12
PAGESNRN.PRD		
(Italic and bold Sonoran-serif 10)	Gothic-text	12
	Sonoran-serif	8, 10, 12, 16, 18, 24
	Kana	12
	Orator	12
	Math-symbol	10, 12
PAGEDL.PRD	This PRD file combines all fonts listed for the four PRD files above.	

IBM Personal Pageprinter 4216

Word supports this printer in PostScript mode.

The IBMLASER.INI file is required. Be sure this file is on the same disk or in the same directory as IBMLASER.PRD. If you use the Setup program to install your PRD file, the INI file is automatically copied with the IBMLASER.PRD file. Select LPT1: to choose the Pageprinter's special EPT port.

To print in landscape mode, reverse the "page length" and the "width" settings in the Format Division Margins command.

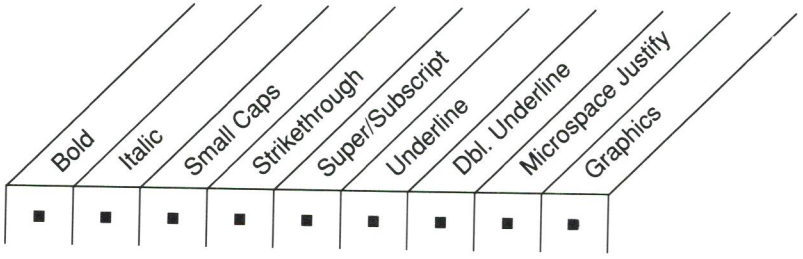
PRD File

IBMLASER.PRD	Also requires IBMLASER.INI.

Model Information

Model Name:	Personal Pageprinter 4216
Line Drawing Font:	Courier
IBM Graphics Characters:	Yes
Graphics Resolution (dpi):	300
Unprintable Regions:	Top: 0.17, Left: 0.17, Bottom: 0.17, Right: 0.17

Printer Features



Font Information

Fonts are available in even sizes between 2 and 126 points (2, 4, 6, 8...126).

Fonts

Courier
Helvetica
Times-Roman
Symbol

IBM Proprinter Series

Word supports the Proprinter, Proprinter II, Proprinter XL, Proprinter III/IIIXL, and Proprinter X24/XL24 models. Be sure to use the PRD file that supports your printer model.

For the Proprinter II/XL and Proprinter III/IIIXL, spacing may be slightly off if you use dots as tab leader characters when using PS fonts.

IBMXL24D.PRD supports downloadable fonts for the Proprinter X24/XL23. The DAT file, IBMXL24D.DAT is required for downloading and must be in the same directory as IBMXL24D.PRD. For more information, see Chapter 4, "Downloading Fonts."

In addition, the Fontset module must be installed in the IBM24D to download fonts, and you can download only one font at a time with this printer. Note that Word supports more font sizes than are listed on the font cartridges by expanding or compressing the font sizes on the cartridge.

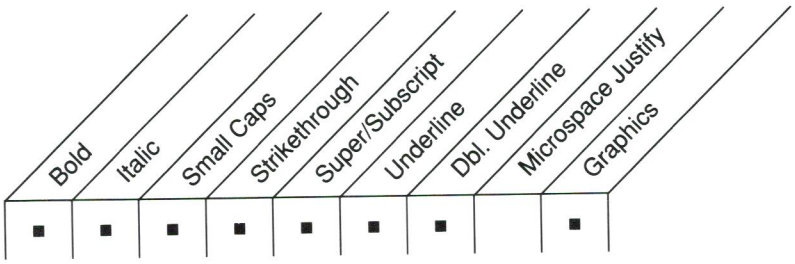
PRD Files

IBMPRO.PRD	Use for the Proprinter.
IBMPROXL.PRD	Use for the Proprinter II and Proprinter XL.
IBMPRO3.PRD	Use for the Proprinter III/IIIXL.
IBMXL24.PRD	Use for the Proprinter X24/XL24.
IBMXL24D.PRD	Use for the Proprinter X24 & XL24 (downloadable fonts).

Model Information

Model Names:	IBM Proprinter IBM Proprinter II & XL IBM Proprinter III & IIIXL IBM Proprinter X24 & XL24
Line Drawing Font:	Pica
IBM Graphics Characters:	Yes
Graphics Resolution (dpi):	60, 120, 180

Printer Features



Font Information

For IBMXL24D.PRD, italics are available only if you have installed the appropriate italic font cartridge or downloaded the appropriate italic font.

Underline is substituted for italics except with IBMPRO3.PRD.

PRD File	Fonts	Font sizes
IBMPRO.PRD		
	Pica	8, 10, 12, 14, 15, 16
	PicaD	8, 10, 12, 14, 15, 16
IBMPROXL.PRD		
	Pica	8, 10, 12, 14, 15, 16
	NLQ	8, 10, 12, 14, 15, 16
	NLQDblHigh	16, 17
	PS	12, 16
	PSNLQ	12, 16

PRD File	Fonts	Font sizes
IBMPRO3.PRD	Same fonts and sizes as IBMPROXL.PRD. Italics supported.	
IBMXL24.PRD (Bold not available in sizes 8, 14)	Pica	8, 12, 14, 16, 18, 24
	PicaD	8, 12, 14, 16
	Elite	10, 15, 17
	EliteD	10, 15
	NLQ	8, 10, 12, 20, 24
	PS	12, 16, 24
IBMXL24D.PRD	Pica	8, 12, 14, 16, 18, 24
	PicaD	8, 12, 14, 16
	Elite	10, 15, 17
	EliteD	10, 15
	LetterGothic	10, 15, 20
	Gothic	8, 14
	NLQ	8, 10, 12, 20, 24
	PrestigePica	8, 12, 14, 16, 24
	Courier	10, 15, 20
	Artisan	8, 12, 14, 16, 24
	TitlePS	12, 16, 24
	CourierPS	12, 16, 24
	BoldfacePS	12, 16, 24
	CourierItalic	8, 10, 12, 20, 24

IBM Quickwriter

To use cartridge fonts, select the IBM Quickwriter (Cartridge) model in the "model" field of the Print Options command. Select the IBM Quickwriter (Download) model to use downloadable fonts. Both models support the Quickwriter's built-in fonts.

You can use only one downloadable font at a time with this printer, and you must install the download font cartridge before downloading a font.

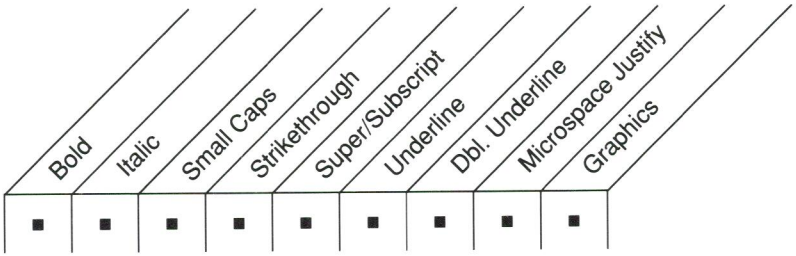
PRD File

IBMQUICK.PRD

Model Information

Model Names:	IBM Quickwriter (Cartridge) IBM Quickwriter (Download)
Line Drawing Font:	Courier
IBM Graphics Characters:	Yes
Graphics Resolution (dpi):	60, 120, 240
Bin Support:	Bins 1-2, envelope feeder

Printer Features



Font Information

Built-in fonts: Courier 10, 12, 15, and 16; Gothic 8 and 14; BoldfacePS, all sizes. Other fonts and font sizes require the appropriate cartridge or downloadable font file. Most fonts support the IBM extended character set. Fonts with an -ML suffix support the multi-lingual characters set (code page 850).

Fonts	Font sizes
Courier	8, 10, 12, 15, 16
CourierPS	12, 16
Prestige	8, 10, 12, 15, 16
PrestigePS	12, 16
LetterGothic	10, 15
Gothic	8, 9, 14, 15
Artisan	12, 16
Title	12, 16
Presentor	12, 16
APL	10, 15
OCR-A	12, 16
OCR-B	12, 16
BoldfacePS	12, 16
BoldfacePS-ML	12, 16
Courier-ML	8, 10, 12, 15, 16
CourierPS-ML	12, 16
Prestige-ML	8, 10, 12, 15, 16
PrestigePS-ML	12, 16
LetterGothic-ML	10, 15
Gothic-ML	8, 9, 14, 15
Artisan-ML	12, 16
Title-ML	12, 16
Presentor-ML	12, 16
Script	10, 15
Script-ML	10, 15
Orator	12, 16
Orator-ML	12, 16
Symbol	10, 12, 15, 16

IBM Quietwriter I & II

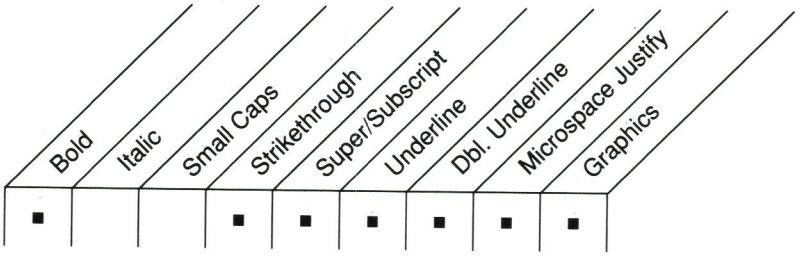
PRD File

IBMQUIET.PRD

Model Information

Model Name:	IBM Quietwriter I & II
Line Drawing Font:	Courier10-slot1
IBM Graphics Characters:	Yes
Graphics Resolution (dpi):	60, 120

Printer Features



Font Information

To use this printer with Word, the Courier 10 cartridge must always be in slot 1 when printing. Other font cartridges fit in slot 2.

Underline is substituted for italics.

Fonts	Font sizes
Courier10-slot1	12, 16
Courier-slot2	8, 10, 14, 15
Prestige-slot2	8, 10, 12, 14, 15, 16
LetterGothic-slot2	10, 15
Gothic-slot2	7, 13
TitlePS-slot2	12
BoldfacePS-slot2	12

IBM Quietwriter III

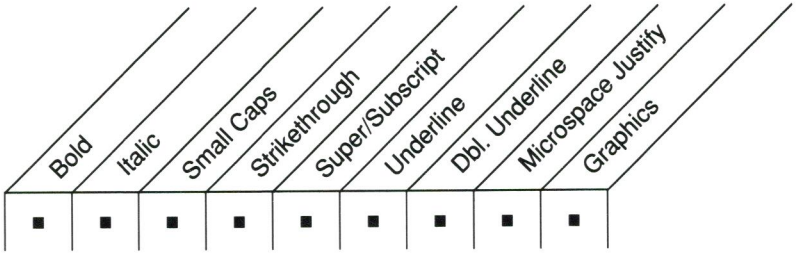
PRD File

IBMQWTR3.PRD

Model Information

Model Name:	IBM Quietwriter III
Line Drawing Font:	Courier
IBM Graphics Characters:	Yes
Graphics Resolution (dpi):	60, 120
Bin Support:	Bins 1-2, envelope feeder

Printer Features



Font Information

The fonts for this printer are supported in cartridge or downloadable form. You can download only one font at a time with this printer, and you must install the download font cartridge before downloading fonts.

Built-in fonts are Courier 7, 10, 12, 14, 15, 16 and Boldface 12, 16 (Normal face). All other fonts require the appropriate cartridge or downloadable font.

If a selected font is not available, the printer beeps and the "font" light comes on. Only one downloadable font may be downloaded at a time.

Italic is available for Courier 10, 12, 15, 16 (including Courier-ML and Courier-WP), and BoldfacePS-WP 12, 16. All other fonts substitute underline for italic.

Fonts with no extension are PC font set fonts. Fonts with the WP extension are Word Processing font set fonts. Fonts with the ML extension are Multilingual font set fonts.

Fonts	Font sizes
Courier	7, 8, 10, 12, 14, 15, 16
Courier-WP	8, 10, 12, 14, 15, 16
Prestige	7, 10, 12, 14, 15, 16
Prestige-WP	8, 10, 12, 14, 15, 16
LetterGothic	10, 15
LetterGothic-WP	10, 15
Gothic-WP	8, 14
DualGothic-WP	10, 15
ModernPS	12, 16
ModernPS-WP	12
Artisan	12, 16
TitlePS	12, 16
Presentor-WP	12, 16
APL-WP	10, 15
Artisan-WP	10, 12, 15, 16
TitlePS-WP	12, 16
BoldfacePS	12, 16
BoldfacePS-WP	12, 16
Bookface-WP	12, 16
Adjutant-WP	10, 15
Advocate-WP	12, 16
Delegate-WP	12, 16
Gothic	8, 14
Gothic-ML	8, 14
Script-WP	10, 15
Courier-ML	7, 8, 10, 12, 14, 15, 16
Prestige-ML	7, 10, 12, 14, 15, 16
LetterGothic-ML	10, 15
Script	10, 15
ModernPS-ML	12, 16
Artisan-ML	12, 16
BoldfacePS-ML	12, 16
TitlePS-ML	12, 16
Orator-WP	12, 16
OldeWorld-WP	10, 15
Symbol-WP	10, 12, 15, 16

IBM Wheel Printer

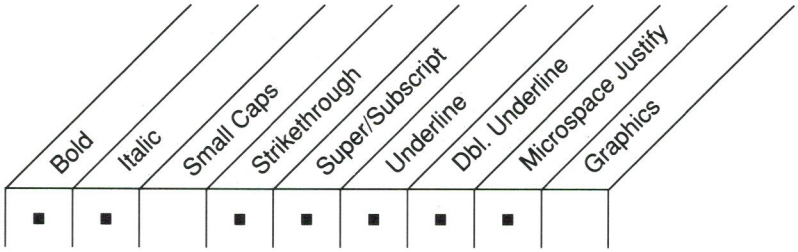
PRD File

IBMWHEEL.PRD

Model Information

Model Name:	IBM Wheelprinter
IBM Graphics Characters:	No
Bin Support:	Single-bin sheetfeeder

Printer Features



Font Information

Italics and font changes require a print wheel change.

Fonts	Font sizes
Courier	8, 10, 12
Artisan	12
Prestige	10
LetterGothic	8, 10
EssayPS	12
BoldfacePS	12

Kyocera F-1010

The PRD files for this printer are available on the Supplemental Printer Disks. Word supports this printer in HP LaserJet emulation mode.

IBM extended characters are available through ASCII 175. Foreign characters can be printed, but characters used for line drawing and paragraph shading are not available.

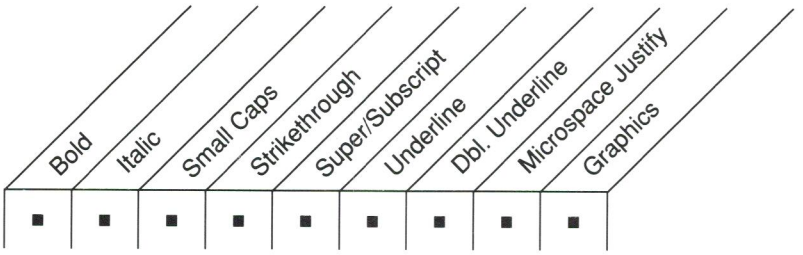
PRD Files

KYOCERAP.PRD	Use for portrait mode.
KYOCERAL.PRD	Use for landscape mode.

Model Information

Model Name:	Kyocera F-1010 (Portrait) Kyocera F-1010 (Landscape)
IBM Graphics Characters:	No
Graphics Resolution (dpi):	75, 150, 300
Unprintable Regions:	Top: 0.17 Left: 0.17 Bottom: 0.17 Right: 0.17

Printer Features



Font Information

Bold, italic, and bold-italic are available except where noted.

Fonts	Font sizes	Notes
Courier	12	
CourierLegal	12	
Elite	7, 10	Landscape: no italic, bold, bold-italic
Gothic	12	Landscape: no italic, bold, bold-italic
LinePrinter	7, 9	Landscape: no italic, bold, bold-italic
Helvetica	6, 8, 10, 12, 14.5	Landscape: no italic, bold, bold-italic; Portrait: no italic, bold-italic 12, 12, 14.5; no bold 10
TimesRoman	8, 10	Landscape: no bold, italic, bold-italic 8, no bold-italic 10

Mannesmann Tally 1x

The PRD file for this printer is available on the Supplemental Printer Disks.

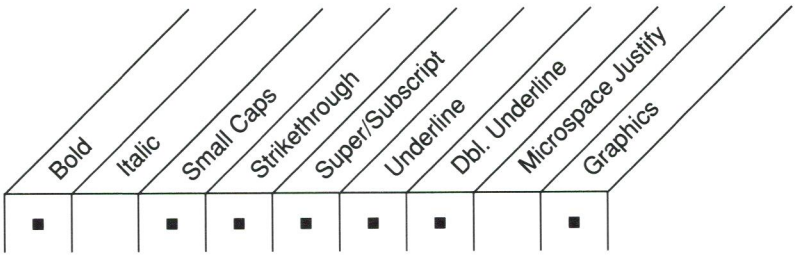
PRD File

MT1X.PRD

Model Information

Model Name:	Mannesmann Tally MT-1x
IBM Graphics Characters:	No
Bin Support:	Bins 1-2

Printer Features



Font Information

Fonts	Font sizes
Pica	6, 7, 10, 12
PicaD	12, 14, 18, 24
Elite	8, 10, 11, 12, 13

Mannesmann Tally 80

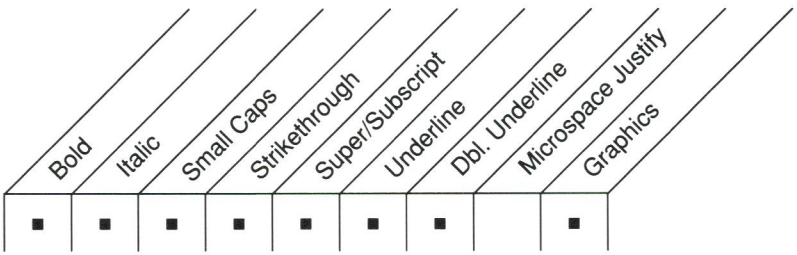
PRD File

MT80.PRD

Model Information

Model Name:	Mannesmann Tally 80
Line Drawing Font:	LineDraw
IBM Graphics Characters:	Yes
Graphics Resolution (dpi):	60, 120, 240

Printer Features



Font Information

For all fonts except LineDraw, IBM extended characters are available through ASCII 175. Foreign characters can be printed, but characters used for line drawing and paragraph shading are not available.

Fonts	Font sizes
Pica	8, 12, 14, 16
PicaD	8, 12, 14, 16
LineDraw	12

Mannesmann Tally 330

This printer uses cyan for blue and blue for violet. Text you format as blue will print in cyan. Text formatted as violet will print blue.

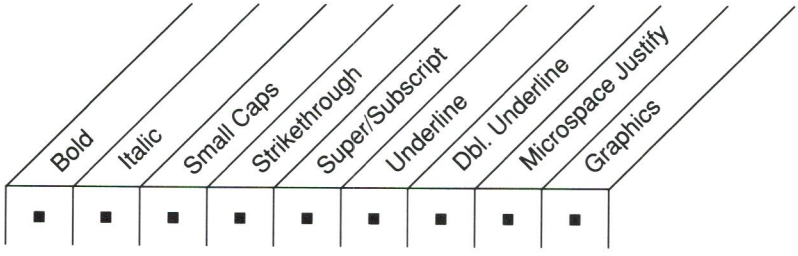
PRD File

MT330.PRD

Model Information

Model Names:	Mannesmann Tally 330 CLR Mannesmann Tally 330
Line Drawing Font:	Pica
IBM Graphics Characters:	Yes
Graphics Resolution (dpi):	60, 120, 240

Printer Features



Font Information

Fonts	Font sizes
Pica	7, 8, 12, 13, 14, 16
PicaD	7, 8, 12, 13, 14, 16
Elite	10, 15
EliteD	10, 15
NLQ	7, 8, 10, 12, 13, 14, 15, 16
LQ	7, 8, 10, 12, 13, 14, 15, 16
PS	12, 16
PSLQ	12, 16

Mannesmann Tally 910

Fonts are available in either landscape or portrait orientation.

To print in landscape orientation, reverse the settings in the "page length" and "width" fields of the Format Division Margins command.

Each PRD file that supports a downloadable font set requires a DAT file for downloading. The DAT file has the same filename as the PRD file it's associated with, but has the extension .DAT (for example, MT910BS.DAT is associated with MT910BS.PRD). The DAT file is copied automatically if you use Setup to install your PRD file.

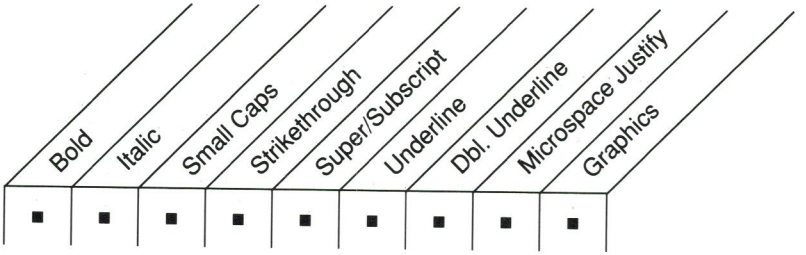
PRD Files

MT910.PRD	Use for internal and cartridge fonts.
MT910BS.PRD	Use for the "Business Style" downloadable font set.
MT910IS.PRD	Use for the "Industry Style" downloadable font set.
MT910SF.PRD	Use for the "Specialty Fonts" downloadable font set.
MT910DP.PRD	Use for the "Data Processing" downloadable font set.

Model Information

Model Name:	Mannesmann Tally 910
IBM Graphics Characters:	No
Graphics Resolution (dpi):	75, 150, 300
Unprintable Regions:	Top: 0, Left: 0.25, Bottom: 0, Right: 0
Bin Support:	Bins 1-2; envelope feeder

Printer Features



Font Information

On MT910.PRD, fonts ending in "_US" use the USASCII character set. Fonts ending in "_R8" use the Roman 8 character set. Courier, LetterGothic 8.5, and Prestige are internal fonts; others require the appropriate cartridge.

On MT910DP.PRD, MT910IS.PRD, and MT910SF.PRD, the Swiss font does not support bold, and italic is available in sizes 10, 12, and 14 only.

PRD Files	Fonts	Font sizes
MT910.PRD		
	Courier	12, 24
	CourierLegal	12
	PrestigeLegal	7, 10
	Prestige	10
	LetterGothic	8.5, 14
	Swiss721_R8	10, 12, 14
	Swiss721_US	6, 8, 10, 12, 14
	OCR-A	12
	OCR-B	12
	Dutch801	10
	LineDraw	10, 12
	TaxLineDraw	12
	Bar3of9	12, 13
	EAN/UPC	12
MT910BS.PRD		
	Courier	12, 24
	CourierLegal	12
	PrestigeLegal	7, 10
	Prestige	7, 10
	LetterGothic	8.5, 12
	Swiss	14
	Dutch	8, 10
	LineDraw	12

(continued)

PRD Files	Fonts	Font sizes
MT910DP.PRD		
	Courier	12, 24
	Prestige	10
	LetterGothic	8.5, 9.5, 12, 14
	LetterGothicLegal	14
	Swiss	6, 8, 10, 12, 14
	Presentation	14, 16, 18
	PresentationLegal	14, 16, 18
	Dutch	8, 10
	LineDraw	14
	TaxLineDraw	12
	PCLine	14
MT910IS.PRD		
	Courier	12, 24
	Prestige	10
	LetterGothic	8.5, 9.5, 12, 14
	LetterGothicLegal	14
	Swiss	6, 8, 10, 12, 14
	Presentation	14, 16, 18
	PresentationLegal	14, 16, 18
	OCR-A	12
	OCR-B	12
	LineDraw	12, 14
	TaxLineDraw	12
	Bar3of9	12
	EAN/UPC	12
	PCLine	14
MT910SF.PRD		
	Courier	12, 24
	CourierLegal	12
	PrestigeLegal	7, 10
	Prestige	7, 10
	LetterGothic	8.5, 9.5
	Swiss	6, 8, 10, 12, 14
	Dutch	8, 10
	LineDraw	12
	Math7	10
	Math8	8, 10
	TaxLineDraw	12
	PS	12, 16
	PSLQ	12, 16

NCR-6416 Laser Printer

The PRD file for this printer is available on the Supplemental Printer Disks.

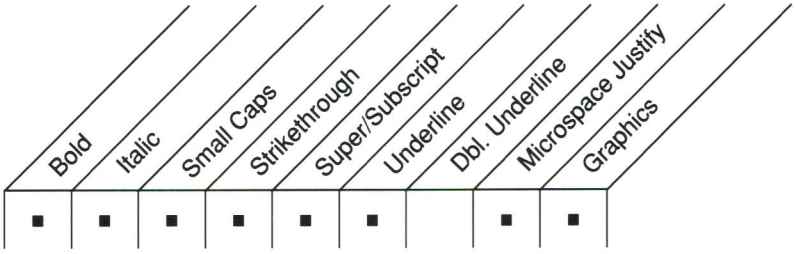
PRD File

NCR6416.PRD

Model Information

Model Name:	NCR-6416 Laser Printer
IBM Graphics Characters:	No
Graphics Resolution (dpi):	75, 150, 300
Unprintable Regions:	Top: 0.20, Left: 0.32, Bottom: 0.20, Right: 0.32

Printer Features



Font Information

Font sizes ending in ".5" are double-high fonts.

Elite, Garland-PS, and Pica and require the appropriate cartridge.

Fonts	Font sizes
Builtin	8, 8.5, 12, 12.5, 14, 14.5, 16, 16.5
Pica	8, 8.5, 12, 12.5, 14, 14.5, 16, 16.5
Elite	8, 8.5, 10, 10.5, 14, 14.5, 15, 15.5
GarlandPS	8, 12

NEC LC860+

Word supports this printer in LaserJet emulation mode.

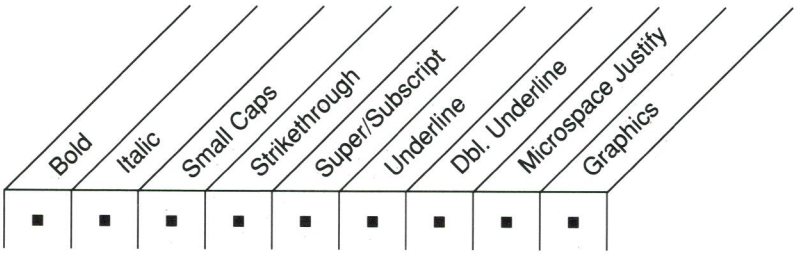
PRD Files

NEC860_1.PRD	Use for portrait fonts on B, C, D, H, J, K, and L cartridges.
NEC860_2.PRD	Use for portrait fonts on F and K and cartridges.
NEC860_3.PRD	Use for portrait fonts on the T cartridge.
NEC860_L.PRD	Use for internal and cartridge landscape fonts.

Model Information

Model Name:	NEC LC860+
Line Drawing Font:	CourierPC
IBM Graphics Characters:	Yes
Graphics Resolution (dpi):	75, 150, 300
Unprintable Regions:	Top: 0.20, Left: 0.30, Bottom: 0.20, Right: 0.20

Printer Features



Font Information

PRD Files	Fonts	Font sizes
NEC860_1.PRD		
	Courier	12
	CourierLegal[H]	12
	PrestigeLegal[G]	7, 10
	Prestige[D/H/J]	7, 10
	CourierPC	12
	LinePrinter	8.5
	HELV[B]	14
	TMSRMN[B]	8, 10
	Danish/Norwegian[C]	12
	UnitedKingdom[C]	12
	French[C]	12
	German[C]	12
	Italian[C]	12
	Swedish/Finnish[C]	12
	Spanish[C]	12
	PiFont[J]	10
	LineDraw[G/H]	10, 12
	Math7[J]	10
	Math8[J]	7, 10
NEC860_2.PRD		
	Courier	12
	CourierPC	12
	LinePrinter	8.5
	HELV[F]	14
	TMSRMN[F/K]	8, 10
	PiFont[K]	10
	Math7[K]	10
	Math8[K]	8, 10
NEC860_3.PRD		
	Courier	12
	LinePrinter	8.5
	HELV	6, 8, 10, 12, 14
	LineDraw	12
NEC860_L.PRD		
	Courier	12
	CourierPC	12
	Prestige	7
	LinePrinter	8.5

NEC P6/P7 and NEC P5 XL/P9 XL

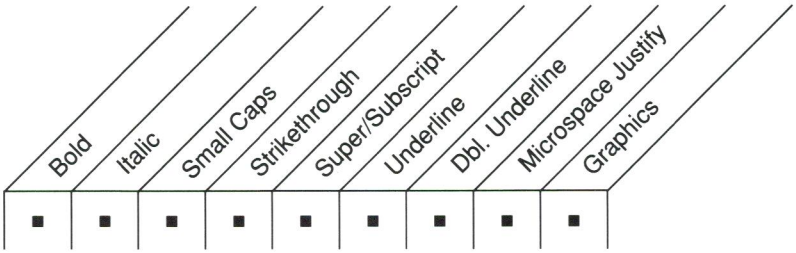
PRD File

NEC.PRD

Model Information

Model Names:	NEC P5XL/P9XL (Color) NEC P5XL/P9XL NEC P6/P7 (Color) NEC P6/P7
Line Drawing Font:	Pica
IBM Graphics Characters:	Yes
Graphics Resolution (dpi):	60, 180
Bin Support:	Manual; bins 1-2

Printer Features



Font Information

Double-high fonts are not supported on the P6/P7 models because they alter line spacing independently of Word.

Fonts ending in numbers are cartridge fonts for the P5XL/P9XL models. The number indicates which slot the cartridge should be placed in. Use CartridgeFont-1 or CartridgeFont-2 for fixed-pitch cartridge fonts.

Fonts	Font sizes	Notes
Pica	7, 8, 12, 13, 14, 16, 18	
PicaD	7, 8, 12, 13, 14, 16, 18	
Elite	6, 10, 12, 15, 17	
EliteD	6, 10, 12, 15, 17	
NLQ	6, 7, 8, 10, 12, 13, 14, 15, 16, 17, 18	
NLQD	6, 7, 8, 10, 12, 13, 14, 15, 16, 17, 18	
CartridgeFont-1	8, 10, 12	P5XL/P9XL models only
CartridgeFont-2	8, 10, 12	P5XL/P9XL models only
BoldItalicPS-1	12	P5XL/P9XL models only
BoldItalicPS-2	12	P5XL/P9XL models only
PS	12	
PSD	12	

NEC P560/P565

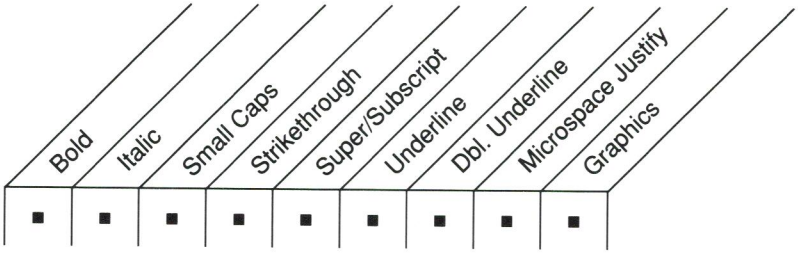
PRD File

NECP5.PRD

Model Information

Model Names:	NEC P560/P565 (Color) NEC P560/P565
Line Drawing Font:	Pica
IBM Graphics Characters:	Yes
Graphics Resolution (dpi):	60, 180
Bin Support:	Dual bin sheetfeeder

Printer Features



Font Information

Fonts ending in the numbers 1 or 2 indicate which slot the font cartridge should be placed in.

Fonts	Font sizes
Pica	7, 12, 13, 16, 18
PicaD	7, 12, 13, 16, 18
Elite	6, 10, 12, 15, 17
EliteD	6, 10, 12, 15, 17
NLQ	10, 12, 15, 16, 17, 18
NLQD	10, 12, 15, 16, 17, 18
CartridgeFont-1	8, 10, 12
CartridgeFont-2	8, 10, 12
BoldItalicPS-1	12
BoldItalicPS-2	12
PS	12
PSD	12

NEC Pinwriter P2/P3

The PRD file for this printer is available on the Supplemental Printer Disks. The PRD file is for the IBM compatible P2/P3 models (P2/P3-3 or P2/P3-6).

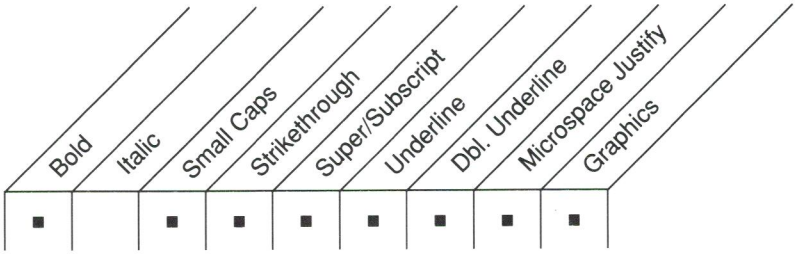
PRD File

NECP2.PRD

Model Information

Model Name:	NEC P2/P3
Line Drawing Font:	HighSpeed
IBM Graphics Characters:	Yes
Graphics Resolution (dpi):	60, 120, 240

Printer Features



Font Information

Underline is substituted for italics.

Justification is not supported for NLQ fonts' graphics characters.

Fonts	Font sizes
Highspeed	8, 12, 14, 16
HighspeedD	8, 12, 14, 16
HighDensity	10, 12, 15, 16
HighDensityD	10, 12, 15, 16
NLQ	10, 12, 15, 16
NLQD	10, 12, 15, 16
HighDensityPS	12, 16
NLQPS	12, 16

NEC Pinwriter P2200

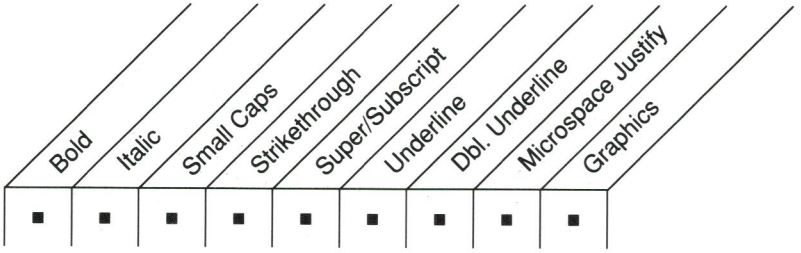
PRD File

NECP2200.PRD

Model Information

Model Name:	NEC P2200
Line Drawing Font:	Pica
IBM Graphics Characters:	Yes
Graphics Resolution (dpi):	60, 180
Bin Support:	Bins 1-2

Printer Features



Font Information

To use cartridge fonts you must install the appropriate cartridge in the back of the printer.

HelvetteCartridge and TimesCartridge are proportional fonts; CartridgeFont supports all of the fixed-pitch cartridge fonts.

Fonts	Font sizes
Pica	7, 8, 12, 13, 14, 16
PicaD	7, 8, 12, 13, 14, 16
Elite	6, 10, 12, 15
EliteD	6, 10, 12, 15
NLQ	6, 7, 8, 10, 12, 13, 14, 15, 16
HelvetteCartridge	10
CartridgeFont	8, 10, 12
PS	12, 16
TimesCartridge	10

NEC Silentwriter 890

This PostScript printer uses POSTSCRP.PRD. See "PostScript Printers" later in this chapter for information about its capabilities and supported fonts.

NEC Spinwriter 3550

The PRD file for this printer is available on the Supplemental Printer Disks.

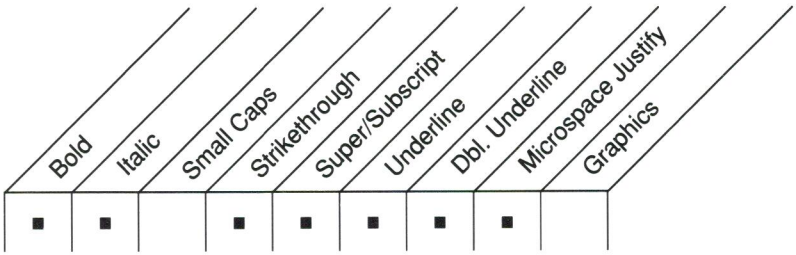
PRD File

NEC3550.PRD

Model Information

Model Name:	NEC Spinwriter 3550
IBM Graphics Characters:	No
Bin Support:	Bins 1-2

Printer Features



Font Information

Italics and font changes require a thimble change.

Fonts	Font sizes
Pica	12
Courier	12
Elite	10
Prestige	8, 10
Gothic	10
OCR-A	10
OCR-B	10
BoldPS	12
EmperorPS	12
TimesRoman	10, 12
Script	10
Focus	12
Greek	10
Kana	10, 12
Russian	12
Symbol	10, 12

NEC Spinwriter 7710

The PRD file for this printer is available on the Supplemental Printer Disks.

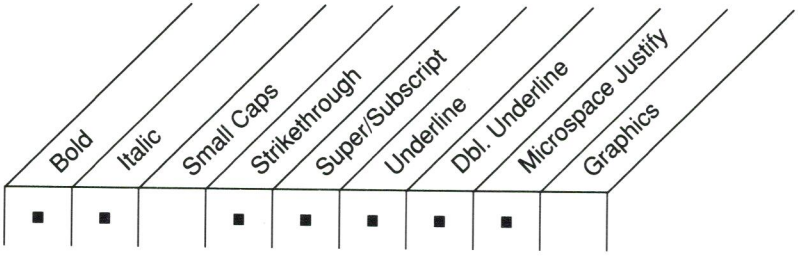
PRD File

NEC7710.PRD

Model Information

Model Name:	NEC Spinwriter 7710
IBM Graphics Characters:	No
Bin Support:	Bins 1-2

Printer Features



Font Information

Italics and font changes require a thimble change.

If you use the Emperor-PS thimble, format your document with the Bold-PS font.

Fonts	Font sizes
Pica	12
Courier	12
Elite	10
Prestige	8, 10
Gothic	10
OCR-A	10
OCR-B	10
BoldPS	12
EmperorPS	12
TimesRoman	10, 12
Script	10
Focus	12
Greek	10
Kana	10, 12
Russian	12
Symbol	10, 12

Okidata 192

Use the OKI192.PRD and OKI192PS.PRD files if you have the IBM graphics compatible model of this printer. If you have the OKI model, use OKI92.PRD (also used to support the Okidata 92/93). With OKI92.PRD, PicaC and EliteC print as fixed-width correspondence quality.

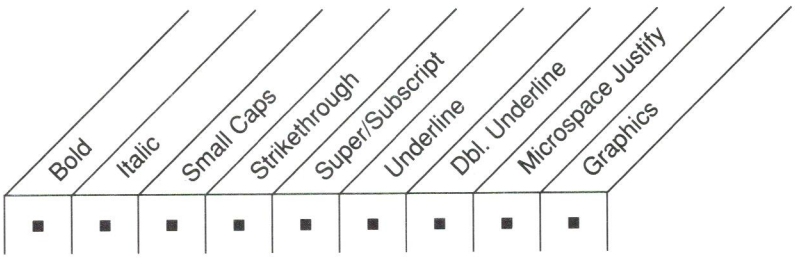
PRD Files

OKI192.PRD	Use with the IBM graphics compatible model. Does not support microspace justification or proportional fonts (PicaC and EliteC).
OKI192PS.PRD	Use with the IBM graphics compatible model. Supports microspace justification and proportional fonts (PicaC and EliteC).
OKI92.PRD	Use with the OKI model of the Okidata 192.

Model Information

Model Names:	Okidata 192/193 (Color) Okidata 192/193
Line Drawing Font:	Pica
IBM Graphics Characters:	Yes
Graphics Resolution (dpi):	60 and 120 for the color model; 60, 120, 240 non-color model

Printer Features



Font Information

Microspace justification works only with the proportional fonts (PicaC and EliteC).

To use a proportional font, use menu select mode on your printer to set *PROP sp = yes*

Fonts	Font sizes
Pica	8, 12, 14, 16
PicaD	8, 12, 14, 16
Elite	10, 15
EliteD	10, 15
PicaC	12, 16
EliteC	10, 15

Okidata 292/293

Word supports only the IBM-compatible version of this printer.

To use a color ribbon, you need to use the printer's menu select mode. Set the color option to BLK (black with color ribbon).

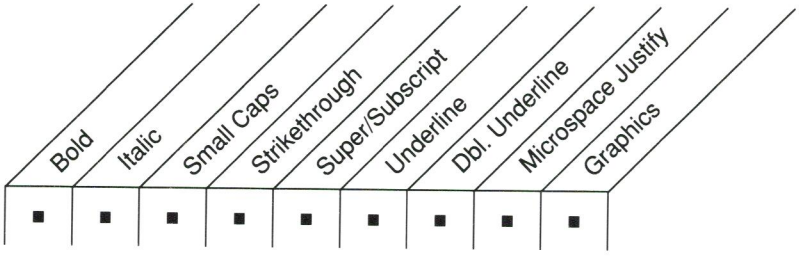
PRD File

OKI292.PRD

Model Information

Model Name:	Okidata 292/293 (Color) Okidata 292/293
Line Drawing Font:	Pica
IBM Graphics Characters:	Yes
Graphics Resolution (dpi):	60 and 120 for the color model; 60, 120, 240 non-color model

Printer Features



Font Information

This printer will not print italic in sizes 8, 14, 17, and 20.

Sizes 14, 15, 16 are double wide; sizes 17, 18, and 19 are double high; and sizes 20, 21, and 22 are double high and double wide.

Fonts	Font sizes
Pica	8, 12, 14, 16, 17, 19, 20, 22
PicaD	8, 12, 14, 16
Elite	10, 15, 18, 21
EliteD	10, 15
NLQ	8, 10, 12, 14, 15, 16
PS	10, 12, 15, 16

Okidata Laserline 6/8

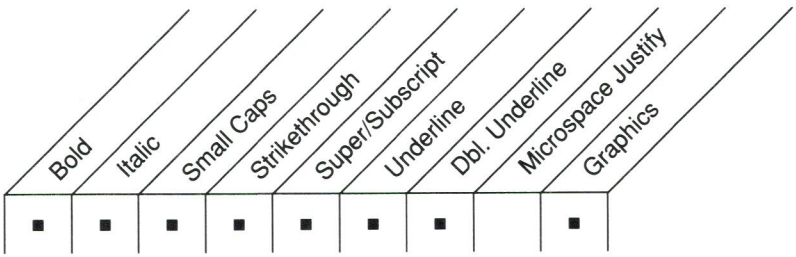
PRD Files

OKILASER.PRD	Use for portrait mode.
OKILSLAN.PRD	Use for landscape mode.

Model Information

Model Names:	Laserline 6/8 (Portrait) Laserline 6/8 (Landscape)
IBM Graphics Characters:	No
Graphics Resolution (dpi):	75, 150, 300
Bin Support:	Envelope feeder
Unprintable Regions:	Top: 0.20, Left: 0.25, Bottom: 0.20, Right: 0.25

Printer Features



Font Information

Bold and italic are not available in LinePrinter, HELV, and TMSRMN 7 and 8.

Fonts	Font sizes	Notes
Courier	12	
LinePrinter	8.5	
HELV	14	Not available in landscape
TMSRMN	7, 8, 9, 10	Not available in landscape

Okidata Microline 92/93

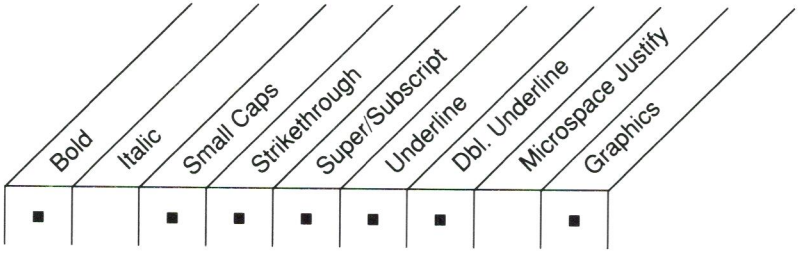
PRD File

OKI92.PRD

Model Information

Model Name:	Okidata 92 & 93
IBM Graphics Characters:	No
Graphics Resolution (dpi):	60

Printer Features



Font Information

Underline is substituted for italics.

Fonts	Font sizes
Pica	8, 12, 14, 16
PicaD	8, 12, 14, 16
Elite	10, 15
EliteD	10,15
PicaC	12, 16
EliteC	10, 15

Okidata Microline 393/393C

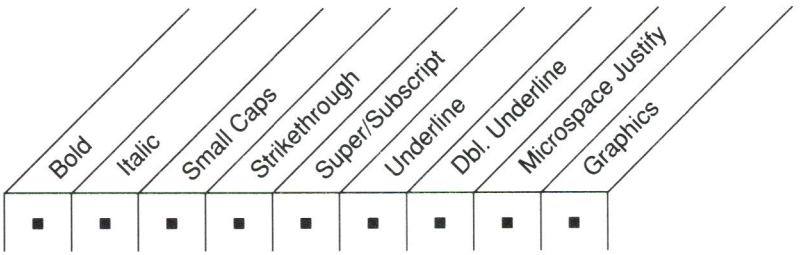
PRD File

OKI393.PRD

Model Information

Model Names:	Okidata 393C (Color) Okidata 393
Line Drawing Font:	Pica
IBM Graphics Characters:	Yes
Graphics Resolution (dpi):	60, 180

Printer Features



Font Information

Italics are not available in sizes 14 and larger, or in size 12 of Elite and EliteD.

Bold is not available in double-strike fonts (fonts ending in "D"). The normal double-strike darkness of these fonts is the same as bold.

Neither bold nor italic is available in High Speed Draft.

Fonts	Font sizes
Pica	7, 8, 12, 14, 16, 21, 24, 36
PicaD	7, 8, 12, 14, 16, 21, 24, 36
Elite	6, 10, 12, 18, 20, 30
EliteD	6, 10, 12, 18, 20, 30
NLQ	10, 12
LQ	6, 7, 8, 10, 12, 14, 16, 18, 20, 21, 24, 30, 36
HighSpeedDraft	7, 8
PS	12, 24, 36

Okidata Pacemark 2410

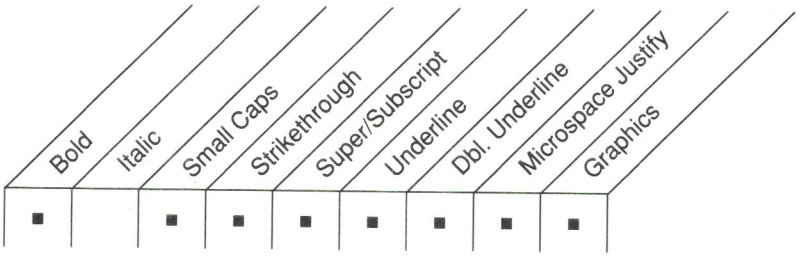
PRD File

OKI2410.PRD

Model Information

Model Name:	Pacemark 2410
IBM Graphics Characters:	No
Graphics Resolution (dpi):	60

Printer Features



Font Information

Condensed and 10-point fonts are not available in correspondence mode.

Fonts	Font sizes
Pica	8, 12, 14, 16
Elite	10, 15
PicaC	12, 16
EliteC	10, 15

Panasonic KX-1092i/1091i and KX-P1080i/P1592

Word supports the Panasonic KX-1092i/1091i in Epson emulation mode.

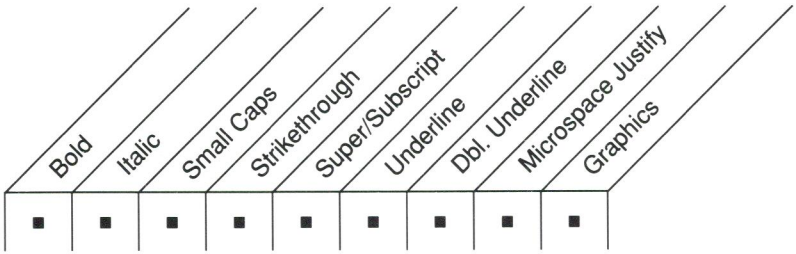
PRD Files

PANA1092.PRD	Use for KX-1092i/1091i.
PANA1080.PRD	Use for KX-P1080i/P1592.

Model Information

Model Names:	Panasonic KX-P1092i Panasonic KX-P1091i KX-P1080i & KX-P1592
Line Drawing Font:	Linedraw for PANA1092.PRD Pica for PANA1080.PRD
IBM Graphics Characters:	Yes
Graphics Resolution (dpi):	60, 120, 240

Printer Features



Font Information

Bold is unavailable in sizes 7, 8, 13, and 14 of all fonts, and in all sizes of the PS font.

For the KX-1092i/1091i printers, for all fonts except LineDraw, IBM extended characters are available through ASCII 175 only. Foreign characters can be printed, but characters used for line drawing and paragraph shading are not available.

Fonts	Font sizes	Notes
Pica	7, 8, 12, 13, 14, 16	
PicaD	7, 8, 12, 13, 14, 16	
Elite	10, 15	
EliteD	10, 15	
Courier NLQ	7, 8, 10, 12, 13, 14, 15, 16	PANA1092.PRD only
NLQPS	7, 8, 10, 12, 13, 14, 15, 16	PANA1092.PRD only
PS	12, 16	
PSD	12, 16	PANA1092.PRD only
Linedraw	12	PANA1092.PRD only

Panasonic KX-P1524

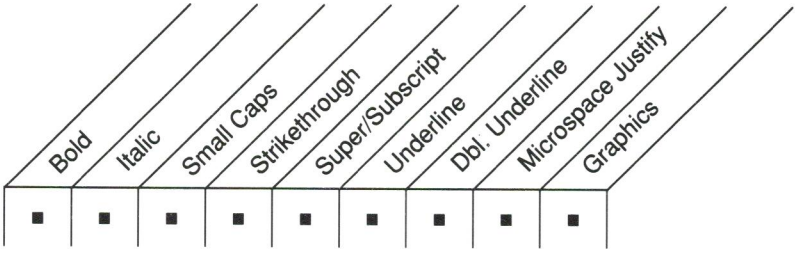
PRD File

PANA1524.PRD

Model Information

Model Name:	Panasonic KX-P1524
Line Drawing Font:	Pica
IBM Graphics Characters:	Yes
Graphics Resolution (dpi):	60, 180

Printer Features



Font Information

Fonts	Font sizes
Pica	7, 8, 12, 13, 14, 16
PicaD	7, 8, 12, 13, 14, 16
Elite	6, 10, 12, 15
EliteD	6, 10, 12, 15
NLQ	6, 7, 8, 10, 12, 13, 14, 15, 16
PS	12, 16

Panasonic KX-P4450 Laser

This printer can autorotate fonts.

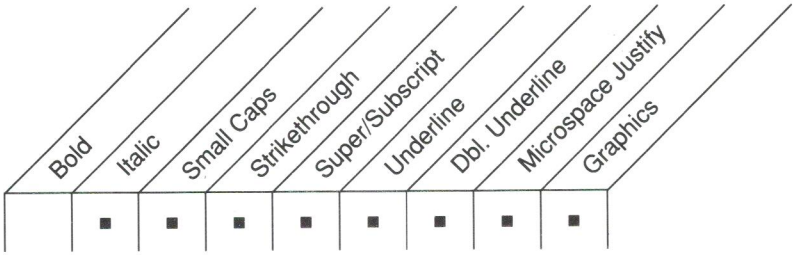
PRD File

PANA4450.PRD

Model Information

Model Name:	Panasonic KX-P4450
IBM Graphics Characters:	No
Graphics Resolution (dpi):	75, 150, 300
Bin Support:	Bins 1-4
Unprintable Regions:	Top: 0.20, Left: 0.17, Bottom: 0.20, Right: 0.33

Printer Features



Font Information

To use the Swiss721 and Dutch801 fonts, the appropriate font card must be installed in the printer.

Double underline and strikethrough are not supported for proportional fonts.

Fonts	Font sizes	Notes
Courier	7, 8, 10, 12	
Swiss721	6, 8, 10, 12, 14	Italic not available
Dutch801	6, 8, 10, 12	Italic not available
Century702	10	

PostScript Printers

Word supports most PostScript printers with POSTSCRP.PRD.

To print with a PostScript printer, you must have an INI file in the same directory as the POSTSCRP.PRD file. For most PostScript printers, the required INI file is POSTSCRPT.INI; the DEC LN03R printer uses the DECLN03R.INI file. If you use Setup, the appropriate INI file is automatically copied to the same directory as the associated PRD file.

PSDOWN.PRD supports a selection of Adobe PostScript downloadable fonts. You can add support for any Adobe downloadable font using Word's MergePRD program. You can also use MergePRD to add support for a mixture of downloadable and internal PostScript fonts. See Chapter 5, "Using the MergePRD Program," for more information.

To download fonts with PSDOWN.PRD, you must have the DAT file PSDOWN.DAT in the same directory as PSDOWN.PRD and the downloadable font files. The DAT file is copied automatically if you use Setup.

The unprintable regions shown in the Model Information section below are for the PostScript Single and Dual Bin models. The unprintable regions for the AST TurboLaser/PS are: Top: 0.11, Left: 0.25, Bottom: 0.24, Right: 0.26. The unprintable regions for the DECLN03R are: Top: 0.14, Left: 0.25, Bottom: 0.25, Right: 0.25.

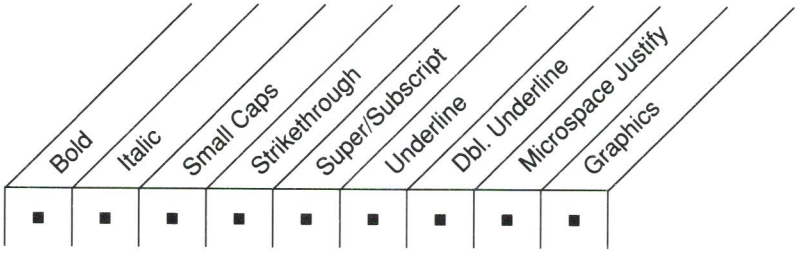
PRD Files

POSTSCRP.PRD	Supports the fonts listed in the table below.
PSDOWN.PRD	Use for downloading Adobe PostScript fonts.

Model Information

Model Names:	Postscript-Single Bin Postscript-Dual Bin AST TurboLaser/PS DEC LN03R
Line Drawing Font:	LineDraw
IBM Graphics Characters:	Yes
Graphics Resolution (dpi):	300
Bin Support:	Dual-bin sheetfeeder with appropriate model selected
Unprintable Regions:	Top: 0.22, Left: 0.33, Bottom: 0.25, Right: 0.26

Printer Features



Font Information

All fonts are available in even sizes between 2 and 126 points (2, 4, 6, 8...126) except LineDraw, which is available in 12 points only.

HelveticaNarrow is called HelveticaCondensed on the AST TurboLaser/PS model.

PRD Files	Fonts	Notes
POSTSCRP.PRD		
	Courier	
	Helvetica	
	AvantGarde	
	HelveticaNarrow	Not available on DEC LNO3R model
	Bookman	Not available on DEC LNO3R model
	Times-Roman	
	NewCentSchlbk	
	Palatino	Not available on DEC LNO3R model
	Souvenir	DEC LNO3R model only
	LubalinGraph	DEC LNO3R model only
	ZapfChancery	Not available on DEC LNO3R model
	Symbol	
	LineDraw	
	ZapfDingbats	Not available on DEC LNO3R model

PRD Files	Fonts
PSDOWN.PRD	
	Courier
	Letter-Gothic
	Helvetica
	HelveticaCondensed
	ITC-Korinna
	Times-Roman
	CenturyOldStyle
	ITC-Souvenir
	ITC-Garamond
	Bodini
	ParkAvenue
	Orator
	Symbol
	LineDraw

QMS KISS/KISS Plus

Three PRD files are available for the QMS KISS and KISS Plus printers. The KISS Plus model also uses QMSSMART.PRD to support font cartridges available for it. QMSSMART.PRD, QMSPOR.PRD, and QMSLAN.PRD also work with the QMS Smartwriter printer.

QMSPOR.PRD and QMSLAN.PRD support downloadable portrait and landscape fonts. To download fonts with these PRD files, you must have the associated DAT files (QMSPOR.DAT and QMSLAN.DAT) in the same directory as the PRD files. If you used Setup, the DAT files were copied automatically.

The model information listed below is for the QMSKISS.PRD (QMS KISS Plus and QMS KISS only), QMSPOR.PRD, and QMSLAN.PRD. Model information for QMSSMART.PRD is listed under the QMS Smartwriter printer.

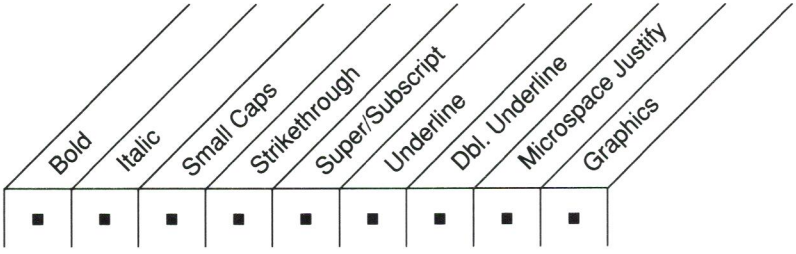
PRD Files

QMSKISS.PRD	Use for built-in fonts.
QMSPOR.PRD	Use for downloadable fonts in portrait mode.
QMSLAN.PRD	Use for downloadable fonts in landscape mode.
QMSSMART.PRD	Use for cartridge fonts (KISS Plus only).

Model Information

Model Names:	QMS KISS Plus QMS KISS QMS Smartwriter
Line Drawing Font:	PicaECS (QMS KISS Plus only)
IBM Graphics Characters:	Yes; QMS KISS Plus only
Graphics Resolution (dpi):	60, 120
Unprintable Regions:	QMS KISS Plus: Top: 0.20, Left: 0.20, Bottom: 0.20, Right: 0.20 QMS KISS: Top: 0.25, Left: 0.25, Bottom: 0.25, Right: 0.25

Printer Features



Font Information

Font information for QMSSMART.PRD is listed under the QMS Smartwriter listing later in this chapter.

Elite, ElitePS, Pica, and PicaPS are built-in fonts in portrait mode, and downloadable fonts in landscape mode. Courier, PrestigeElite, and LetterGothic fonts belong to the Typewriter I family. Fonts ending in ECS belong to the ECS Typewriter I Scientific family. Fonts ending in Legal belong to the Typewriter I Legal family. Fonts ending in PC belong to the PC Graphics family.

PRD Files	Fonts	Font sizes	Notes
QMSKISS.PRD (Italics available in PrestigeElite only)	Pica	8, 10, 12	
	PicaPS	8, 10, 12	
	Courier	12	
	PrestigeElite	10	
	LetterGothic	8	KISS Plus only
	PicaECS	8, 10, 12	KISS Plus only
	Q-Format	5, 8.5, 16	Sizes 5, 8.5 KISS Plus only
QMSPOR.PRD (Portrait)	Pica	8, 12	Built-in font
	PicaPS	8, 12	Built-in font
	Elite	10	Built-in font
	ElitePS	10	Built-in font
	Courier	10	
	PrestigeElite	9	
	LetterGothic	10	
	Q-Format	5, 6, 7, 8, 9, 10, 11, 12, 14, 16, 18, 24	
	CourierECS	10	
	PrestigeEliteECS	9	
	LetterGothicECS	9, 10	
	CourierPC	10	
	PrestigeElitePC	9	
	LetterGothicPC	10	
	CourierLegal	10	
	PrestigeEliteLegal	9	
	LetterGothicLegal	10	
	OCRA	10	
	OCRB	10	
	Hamilton	10, 12, 14, 18	
	Q-Roman	10, 12, 14, 18	
	LineDraw	12	
	Bar3of9	11, 12	
QMSLAN.PRD (Landscape) (Landscape Pica, PicaPS, Elite, ElitePS are downloadable fonts, not built-in)	(Same fonts and sizes as QMSPOR.PRD)		

QMS PS 800/800 PS II

These PostScript printers use the POSTSCRP.PRD file. See the "PostScript Printer" listing for model and font information.

QMS Smartwriter

The PRD file for this printer is available on the Supplemental Printer Disks.

QMSPOR.PRD and QMSLAN.PRD support downloadable portrait and landscape fonts. To download fonts with these PRD files, you must have the associated DAT files (QMSPOR.DAT and QMSLAN.DAT) in the same directory as the PRD files. If you used Setup, the DAT files were automatically copied.

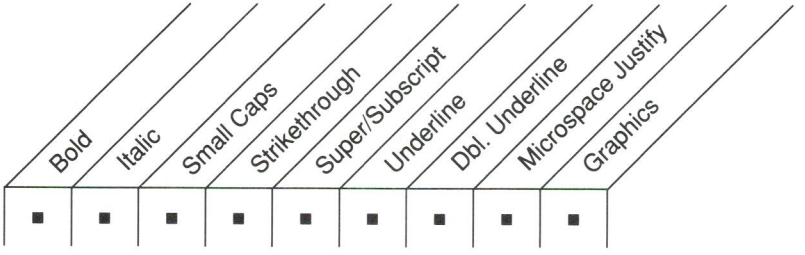
PRD Files

QMSSMART.PRD	Use for Smartwriter cartridges.
QMSPOR.PRD	Use for downloadable fonts in portrait mode.
QMSLAN.PRD	Use for downloadable fonts in landscape mode.

Model Information

Model Names:	Smartwriter Smartwriter [LASERGRAFIX] Smartwriter [LEGAL] Smartwriter [OFFICE 1] Smartwriter [OFFICE 2]
Line Drawing Font:	Clairborne
IBM Graphics Characters:	Yes
Graphics Resolution (dpi):	60, 120
Unprintable Regions:	Top: 0.25, Left: 0.25, Bottom: 0.25, Right: 0.25

Printer Features



Font Information

If you print without inserting a font cartridge, the document will be printed using one of the built-in fonts (see table below). The listings below show which fonts are supported by each model for this printer.

Italic is available only where noted; otherwise underline is substituted for italic.

Fonts	Font sizes	Notes
Pica	8, 12	Built-in font
PicaPS	8, 12	Built-in font
Elite	10	Built-in font
ElitePS	10	Built-in font
EDP	8	Standard Lasergrafix
EDP-PS	8	Standard Lasergrafix
Q-Type	12	Office 1, Office 2
ApolloPS	10	Standard Lasergrafix
SansSerifBold	7	Office 1, Office 2
Typewriter	12	Built-in font; italic available
ScarletPS	16	Legal, Office 2
TypewriterPS	12	Built-in font; italic available
Q-TypeBold	12	Legal
Hamilton	10, 12	Office 2
Clairborne	12	Available on all cartridges
ClairbornePS	12	Available on all cartridges
Q-TypeLegal	10, 12	Legal
Q-Gothic	10	Italic available
ApolloPS	8	Office 1
SimplexRomanPS	5	Standard Lasergrafix, Legal
StandardRomanPS	10	Standard Lasergrafix; italic available
ComplexRomanBoldPS	15	Standard Lasergrafix
Q-Greek	12	Legal, Office 1, Office 2

Quadram QuadLaser

The PRD file for this printer is available on the Supplemental Printer Disks.

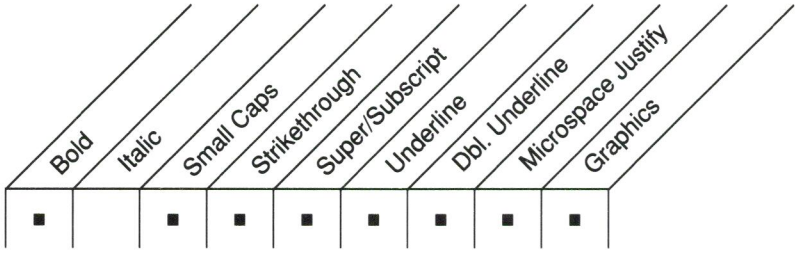
PRD File

QUADLASR.PRD

Model Information

Model Name:	QuadramQuadlaser
Line Drawing Font:	PC-LineDraw
IBM Graphics Characters:	Yes
Downloadable Fonts:	Yes
Unprintable Regions:	Top: 0.19, Left: 0.22, Bottom: 0, Right: 0
Graphics Resolution (dpi):	60, 120

Printer Features



Font Information

Underline and double underline are not supported with Helvetica and TimesRoman.

Fonts	Font sizes
Courier	12
Spreadsheet	8
Prestige	10
Profile	24
Helvetica	6, 8, 10, 12, 14, 16, 24, 36
TimesRoman	6, 8, 10, 12, 14, 16, 24, 36
Greek-Math	12
PC-LineDraw	12

Qume Sprint 11

The PRD file for this printer is available on the Supplemental Printer Disks.

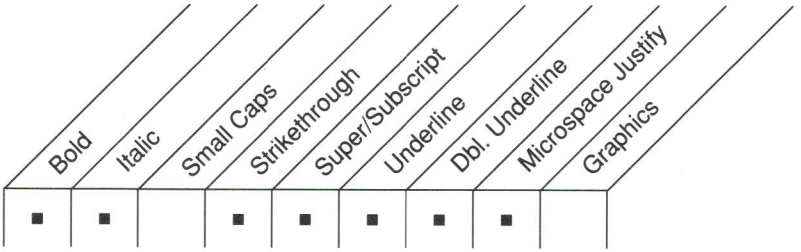
PRD File

QUME11.PRD

Model Information

Model Name:	Qume Sprint 11
IBM Graphics Characters:	No
Graphics Resolution (dpi):	Graphics not available
Bin Support:	Dual-bin sheetfeeder

Printer Features



Font Information

Fonts	Font sizes
Pica	12
Elite	10
Prestige	10, 12
LetterGothic	8, 10
EssayPS	12
TriadPS	12
OCR-A	12
OCR-B	12
BoldfacePS	12
ModernPS	12
Narrator	12
Kana	12

Ricoh LP4080R

The PRD files for this printer are available on the Supplemental Printer Disks.

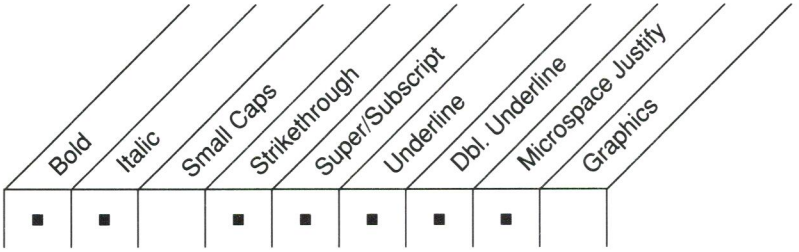
PRD Files

RICOHLP.PRD	Use for portrait mode.
RICOHLPL.PRD	Use for landscape mode.

Model Information

Model Names:	Ricoh LP4080R (Portrait) Ricoh LP4080R (Landscape)
IBM Graphics Characters:	No
Graphics Resolution (dpi):	75, 150, 300
Unprintable Regions:	Top: 0.18, Left: 0.25, Bottom: 0.18, Right: 0.25

Printer Features



Font Information

Double underline and strikethrough may print slightly off when using the proportionally spaced Boldface-PS font.

Fonts	Font sizes
Courier	7, 12
CourierPC	12
PrestigePC	10
Prestige	7, 10
LetterGothic	7, 8, 10
LetterGothicPC	8
Helvetica	10
BoldfacePS	12
TMSRoman	11
CenturyPSBold	12
CenturyPS-PC	12

Ricoh PC Laser 6000

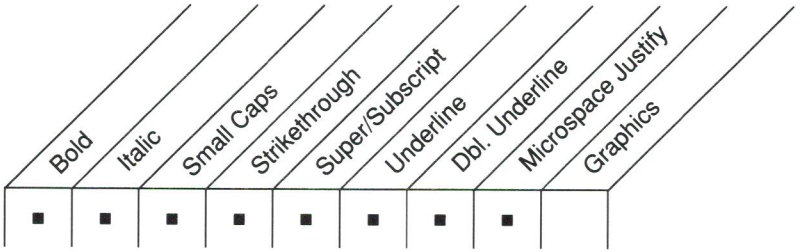
PRD Files

RICOHPC.PRD	Use for portrait mode.
RICOHPCL.PRD	Use for landscape mode.

Model Information

Model Names:	Ricoh PC 6000 (Portrait) Ricoh PC 6000 (Landscape)
IBM Graphics Characters:	No
Graphics Resolution (dpi):	75, 150, 300
Unprintable Regions:	Top: 0.17, Left: 0.25, Bottom: 0.17, Right: 0.25

Printer Features



Font Information

The italic and bold font selections are provided for those fonts that do not have all typefaces available on one cartridge. The fonts ending with PC support the IBM extended characters through ASCII 175. Foreign characters can be printed, but characters used for line drawing and paragraph shading are not available.

Fonts	Font sizes
Courier	12
CourierPC	12
PrestigePC	10
Prestige	10
LetterGothic	8, 10
LetterGothicItalic	8
LetterGothicPC	8
Helvetica	10
CourierLineprinter	7
PrestigeLineprinter	7
LetterGothicLineprinter	7
TMSRoman	11
CenturyPS	12
CenturyPS-PC	12
CenturyPSItalic	12
CenturyPSBold	12

Seikosha BPI-5420AI

The PRD file for this printer is available on the Supplemental Printer Disks.

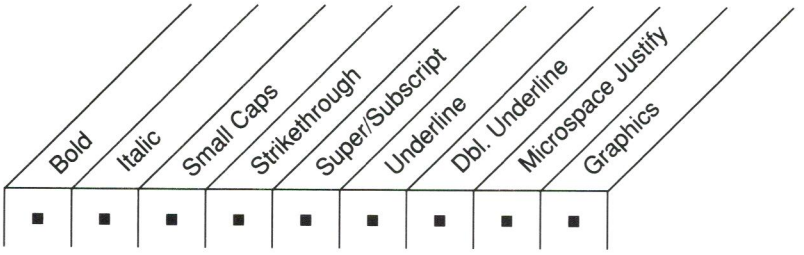
PRD File

BPI5420.PRD

Model Information

Model Name:	Seikosha BPI-5420AI
IBM Graphics Characters:	No
Graphics Resolution (dpi):	60, 120, 240

Printer Features



Font Information

In order to print text as superscript or subscript, you must format the text by selecting BP-Sub (for subscript) or BP-Super (for superscript) in the "font name" field of the Format Character command. You cannot simply select subscript or superscript in the "position" field of the Format Character command to make text print as superscript or subscript.

Fonts	Font sizes
Pica	8, 12, 14, 16
PicaD	8, 12, 14, 16
Elite	10, 15
EliteD	10, 15
NLQ	10, 12, 15, 16
BP-Super	12, 16
BP-Sub	12, 16
PS	12, 16

Seikosha SP-1000

The PRD file for this printer is available on the Supplemental Printer Disks.

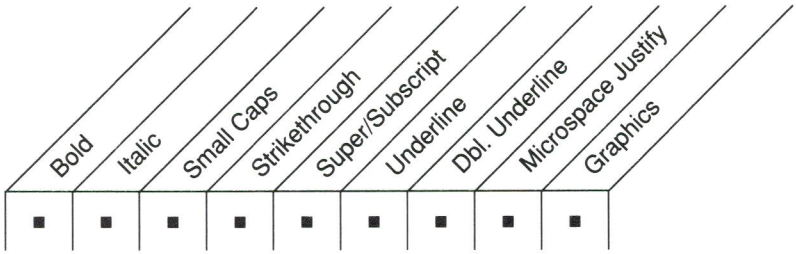
PRD File

SP1000.PRD

Model Information

Model Name:	Seikosha SP-1000
Line Drawing Font:	Pica
IBM Graphics Characters:	Yes
Graphics Resolution (dpi):	60, 120, 240

Printer Features



Font Information

Fonts	Font sizes
Pica	8, 12, 14, 16
PicaD	8, 12, 14, 16
Elite	10, 15
EliteD	10, 15
NLQ	10, 12, 15, 16
PS	12, 16
PSD	12, 16
PSNLQ	12, 16

Silver Reed Exp 400

The PRD file for this printer is available on the Supplemental Printer Disks.

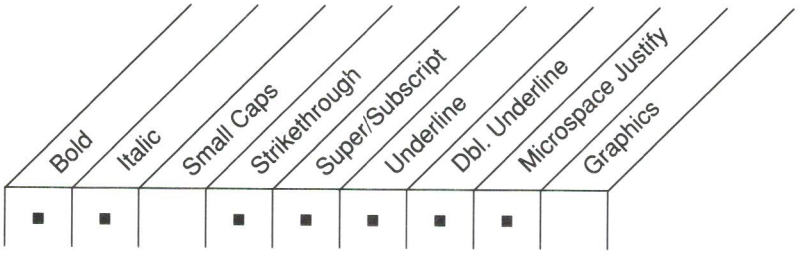
PRD File

SREXP.PRD

Model Information

Model Name:	SilverReed EXP 400
IBM Graphics Characters:	No

Printer Features



Font Information

Fonts	Font sizes
Pica	12
Courier	12
Elite	10
Prestige	10, 12
LetterGothic	8, 10
Titan	10, 12
OCR-A	12
OCR-B	12
Script	10
Narrator	12
Emphasis	12
Kana	10, 12
Hebrew	10

Star Micronics Delta

The PRD file for this printer is available on the Supplemental Printer Disks. You can use DELTA.PRD for the Star Gemini printer as well.

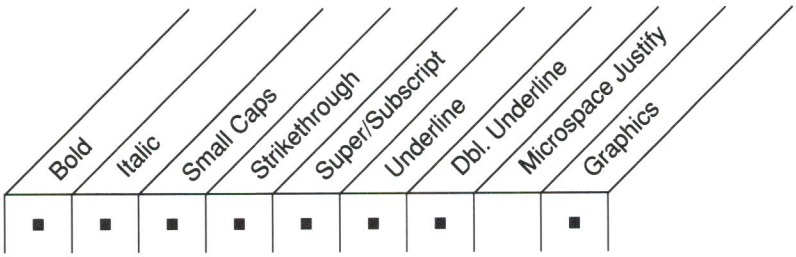
PRD File

DELTA.PRD

Model Information

Model Name:	Star Micronics Delta
Line Drawing Font:	Linedraw
IBM Graphics Characters:	Yes
Graphics Resolution (dpi):	60, 120, 240

Printer Features



Font Information

For all fonts except LineDraw, IBM extended characters are available through ASCII 175. Foreign characters can be printed, but characters used for line drawing and paragraph shading are not available.

Fonts	Font sizes
Pica	8, 12, 14, 16
PicaD	8, 12, 14, 16
Elite	10, 15
EliteD	10, 15
Linedraw	12

Star Micronics NB 24-15

Word supports this printer in Epson LQ emulation mode.

Word does not support double strike, double wide/high, and quad wide/high modes.

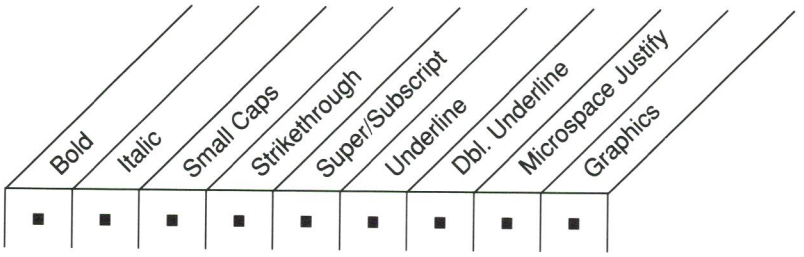
PRD File

STARNB24.PRD

Model Information

Model Name:	Star Micronics NB24-15
IBM Graphics Characters:	No
Graphics Resolution (dpi):	60, 180
Bin Support:	Bins 1-2

Printer Features



Font Information

For all fonts, IBM extended characters are available through ASCII 175. Foreign characters can be printed, but characters used for line drawing and paragraph shading are not available.

Fonts	Font sizes
Pica	7, 8, 12, 13, 14, 16
Elite	6, 10, 12, 15
NLQ	6, 7, 8, 10, 12, 13, 14, 15, 16
PS	12, 16

Star Micronics NX-10/15

Word supports this printer in Epson-FX emulation mode.

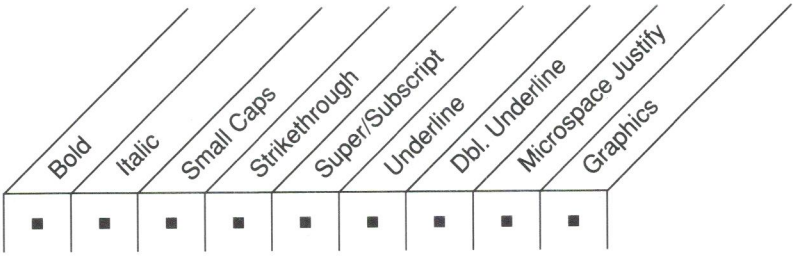
PRD File

STARNX15.PRD

Model Information

Model Name:	NX-10 & NX-15
IBM Graphics Characters:	Yes
Line Drawing Font:	Linedraw
Graphics Resolution (dpi):	60, 120, 240

Printer Features



Font Information

For all fonts except Linedraw, IBM extended characters are available through ASCII 175. Foreign characters can be printed, but characters used for line drawing and paragraph shading are not available.

Fonts	Font sizes	Notes
Pica	8, 12, 14, 16	No bold, sizes 8, 14
PicaD	8, 12, 14, 16	No bold, sizes 8, 14
Elite	10, 15	No bold
EliteD	10, 15	No bold
NLQ	12, 16	No bold
PS	12, 16	
Linedraw	12	

Star Micronics Radix

The PRD file for this printer is available on the Supplemental Printer Disks.

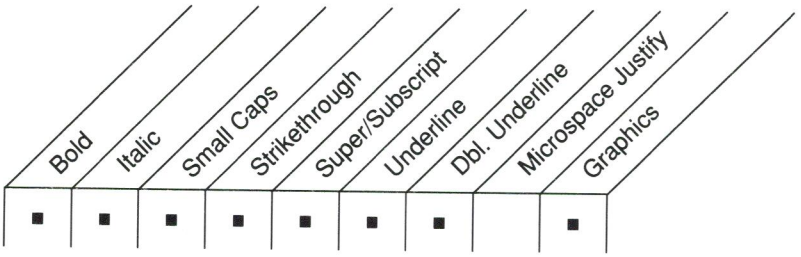
PRD File

RADIX.PRD

Model Information

Model Name:	Star Micronics Radix
IBM Graphics Characters:	Yes
Line Drawing Font:	Linedraw
Graphics Resolution (dpi):	60, 120, 240

Printer Features



Font Information

IBM extended characters are available through ASCII 175. Foreign characters can be printed, but characters for graphics and paragraph shading are not available.

Fonts	Font sizes
Pica	8, 12, 14, 16
PicaD	8, 12, 14, 16
Elite	10, 15
EliteD	10, 15
NLQ	8
Linedraw	12

Tandy DMP 106

The PRD file for this printer is available on the Supplemental Printer Disks.

This printer works only with a Tandy 1000 personal computer and a Tandy parallel cable.

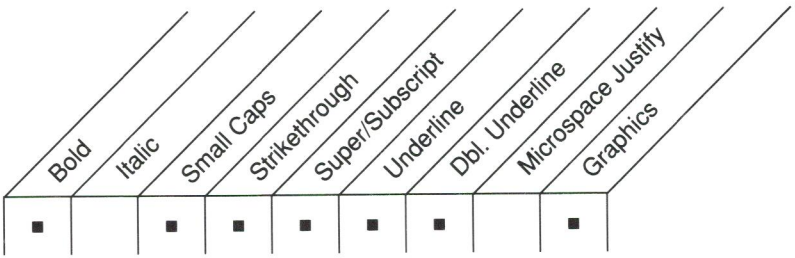
PRD File

DMP106.PRD

Model Information

Model Name:	Tandy DMP 106
IBM Graphics Characters:	No
Graphics Resolution (dpi):	60

Printer Features



Font Information

Fonts	Font sizes
Pica	8, 12, 14, 16
Elite	10, 15

Tandy DMP 130

Before using the Tandy DMP 130 with a computer other than a Tandy, follow the instructions in the printer manual to set dip switches for IBM mode emulation.

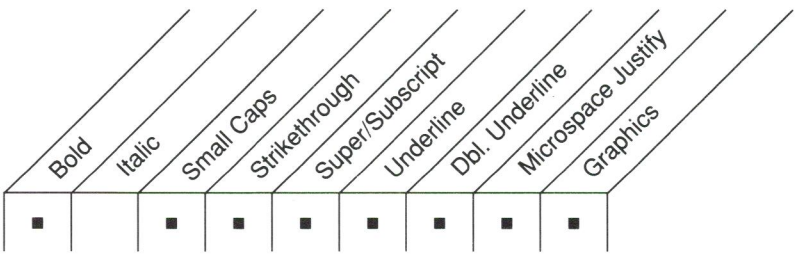
PRD File

DMP130.PRD

Model Information

Model Name:	Tandy DMP 130
Line Drawing Font:	Pica
IBM Graphics Characters:	Yes
Graphics Resolution (dpi):	60, 120

Printer Features



Font Information

Fonts	Font sizes
Pica	8, 12, 14, 16
PicaD	8, 12, 14, 16
Elite	10, 15
EliteD	10, 15
NLQ	10, 12, 15, 16
NLQD	10, 12, 15, 16
PS	12, 16

Tandy DMP 200

The PRD file for this printer is available on the Supplemental Printer Disks.

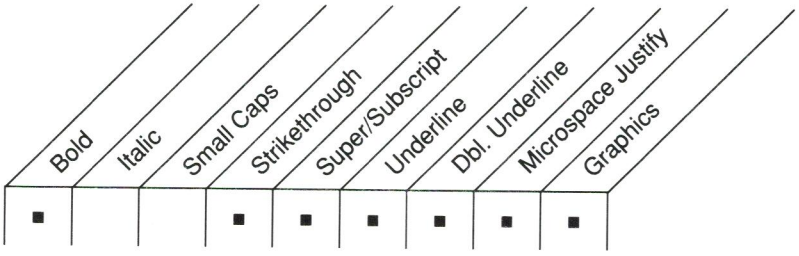
PRD File

DMP200.PRD

Model Information

Model Name:	Tandy DMP 200
IBM Graphics Characters:	No
Graphics Resolution (dpi):	60

Printer Features



Font Information

Fonts	Font sizes
PicaC	12, 24
Proportional	8, 16
Condensed	7, 14

Tandy DMP 400

The PRD file for this printer is available on the Supplemental Printer Disks.

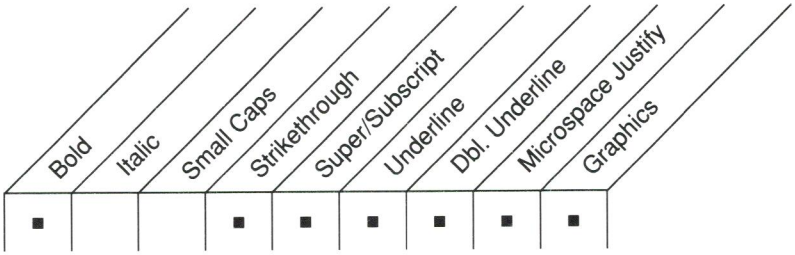
PRD File

DMP400.PRD

Model Information

Model Name:	Tandy DMP 400
IBM Graphics Characters:	No
Graphics Resolution (dpi):	60

Printer Features



Font Information

Underline is substituted for italic.

Fonts	Font sizes
PicaC	12, 24
PS	8, 16
Condensed	7, 14

Tandy DMP 430

Alignment at some tab stops may be up to a half-character off.

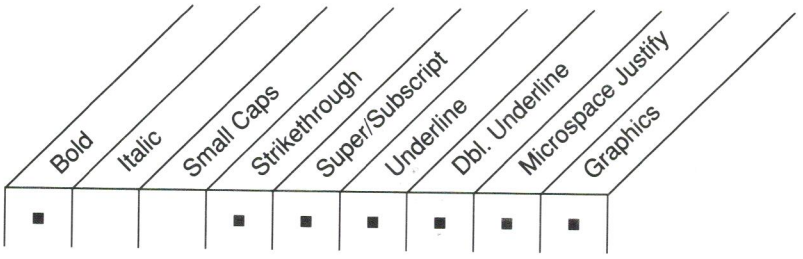
PRD File

DMP430.PRD

Model Information

Model Name:	Tandy DMP 430
IBM Graphics Characters:	No
Graphics Resolution (dpi):	60

Printer Features



Font Information

Underline is substituted for italics.

Fonts	Font sizes
PicaC	12, 24
PS	8, 16
Condensed	7, 14

Tandy DMP 2100

The CMP2100 PRD file for this printer is available on the Supplemental Printer Disks.

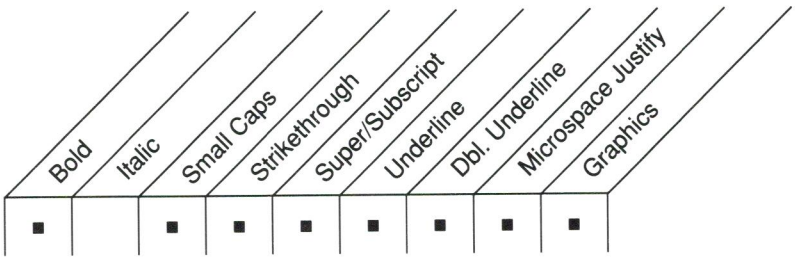
PRD Files

DMP2100.PRD	Use to print in standard mode.
CMP2100.PRD	Use to print in condensed mode.

Model Information

Model Name:	Tandy DMP 2100
IBM Graphics Characters:	No
Graphics Resolution (dpi):	60, 180

Printer Features



Font Information

The PS font does not support double underlines. If you use double underline with the PS font, the underline could fall short of the last character.

Underline is substituted for italics.

Fonts	Font sizes	Notes
Pica	10, 12, 20, 24	
PicaC	10, 12, 20, 24	
PS	8, 16	
Condensed	7, 14	Requires CMP2100.PRD

Tandy DMP 2100P

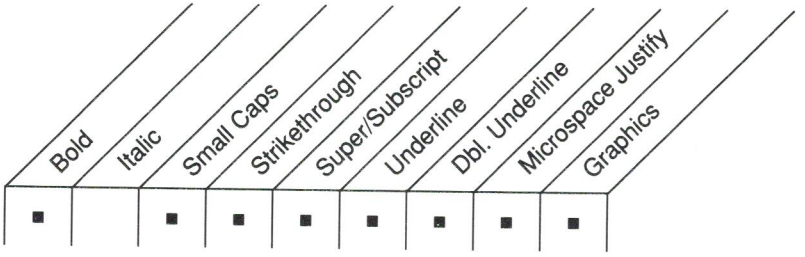
PRD File

DMP2100P.PRD

Model Information

Model Name:	Tandy DMP 2100P
IBM Graphics Characters:	No
Graphics Resolution (dpi):	60, 180

Printer Features



Font Information

Underline is substituted for italics in all fonts and sizes.

Fonts	Font sizes
Pica	10, 12, 20, 24
Courier	12, 24
Elite	10, 12, 20, 24
CourierPS	8, 16
ElitePS	8, 16

Tandy DMP 2110/2120

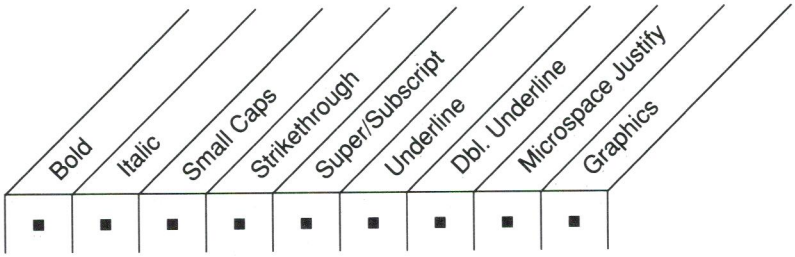
PRD Files

DMP2110.PRD	Use for the Tandy DMP 2110.
DMP2120.PRD	Use for the Tandy DMP 2120.

Model Information

Model Names:	Tandy DMP 2110 Tandy DMP 2120
IBM Graphics Characters:	No
Graphics Resolution (dpi):	60, 180

Printer Features



Font Information

CourierPS is available in size 12 only in DMP2120.PRD; size 12 is not available in DMP2110.PRD. ElitePS is available in size 10 only in DMP2120.PRD; size 10 is not available in DMP2110.PRD.

Fonts	Font sizes	Notes
Pica	10, 12, 20, 24	
Courier	12, 24	
Elite	10, 12, 20, 24	
CourierPS	8, 12, 16	Size 12 in DMP2120 only
ElitePS	8, 12, 16	Size 10 in DMP2120 only

Tandy DMP 2200

The PRD file for this printer is available on the Supplemental Printer Disks.

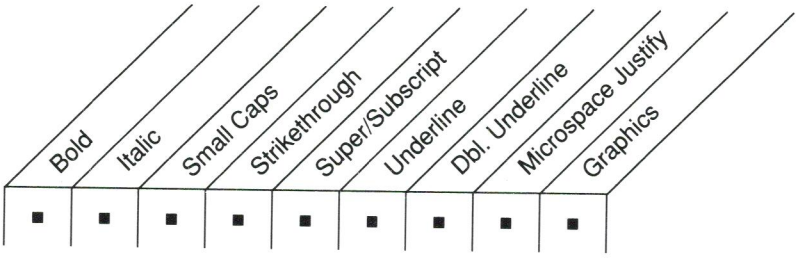
PRD File

DMP2200.PRD

Model Information

Model Name:	Tandy DMP 2200
IBM Graphics Characters:	No
Graphics Resolution (dpi):	60

Printer Features



Font Information

Italic is a font, not a character format. To print italic characters, you must select the text and select the Italic font in the "font name" field of the Format Character command. If you do not change the font and simply select Yes in the "italic" field of the Format Character command, the text will print underlined.

When using the PS (proportional) font, underlines and double underlines may end before the last character with the format.

Fonts	Font sizes
Pica	8, 10, 12, 20, 24
PicaC	10, 12, 20, 24
PS	12, 24
Italic	10, 12, 20, 24

Tandy DW II/DW IIB

The DWII.PRD file for the DWII model is available on the Supplemental Printer Disks.

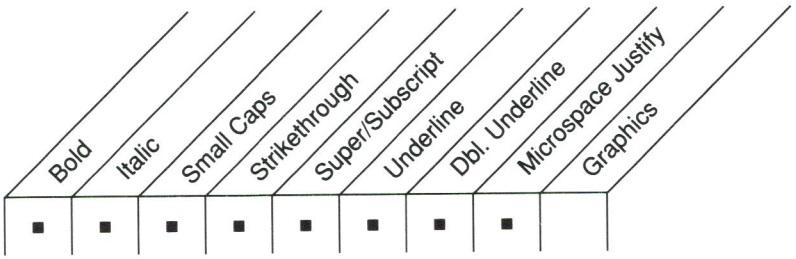
PRD Files

DWII.PRD	Use for DW II model.
DWIIB.PRD	Use for DW IIB model.

Model Information

Model Names:	Tandy DWII Tandy DWIIB
IBM Graphics Characters:	No

Printer Features



Font Information

Italic is a font, not a character format. To print italic characters, you must select the text and select the Tile-Italic font in the "font name" field of the Format Character command. If you do not change the font and simply select Yes in the "italic" field of the Format Character command, the text will print underlined.

Small caps are available only with the Tile-Italic font.

Fonts	Font sizes
Pica	12
Courier	12
Prestige-Elite	10
Letter-Gothic	10
Gothic	10
Cubic	8
BoldPS	8
Madeleine	8
Tile-Italic	10, 12
Narrator	12

Tandy DWP 220/230

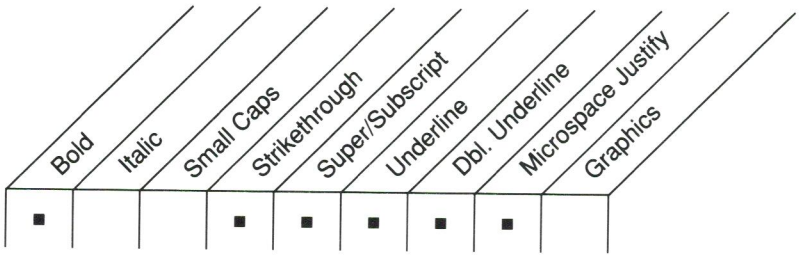
PRD Files

DWP220.PRD	Use for DWP 220 model.
DWP230.PRD	Use for DWP 230 model.

Model Information

Model Names:	Tandy DWP 220 Tandy DWP 230
IBM Graphics Characters:	No

Printer Features



Font Information

For the DWP 220 model (DWP220.PRD), underline is substituted for italics.

Fonts	Font sizes
Courier	12
Prestige	10
VeneziaPS	8

Tandy DWP 510/520

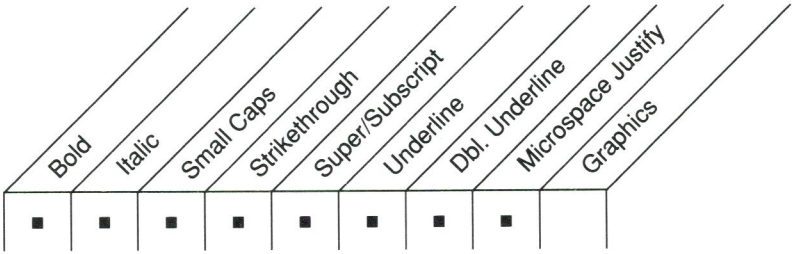
PRD Files

DWP510.PRD	Use for the Tandy DWP 510.
DWP520.PRD	For the Tandy DWP 520

Model Information

Model Names:	Tandy DWP 510 Tandy DWP 510 (Sheetfeeder) Tandy DWP 520
IBM Graphics Characters:	No

Printer Features



Font Information

Italic is a font, not a character format. To print italic characters, you must select the text and select the Tile-Italic font in the "font name" field of the Format Character command. If you do not change the font and simply select Yes in the "italic" field of the Format Character command, the text will print underlined.

Small caps are available only with the Tile-Italic font.

Fonts	Font sizes
Pica	12
Courier	12
Prestige-Elite	10
Letter-Gothic	10
Gothic	10
CubicPS	8
BoldPS	8
Madeleine	8
Tile-Italic	10, 12
Narrator	12

Tandy LP 1000

This PRD supports Tandy DMP2100 emulation mode.

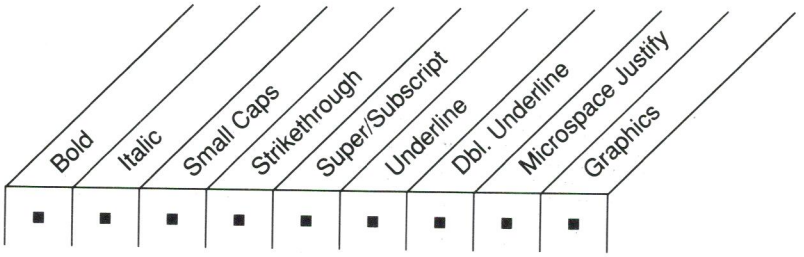
PRD File

LP1000.PRD

Model Information

Model Name:	Tandy LP 1000
IBM Graphics Characters:	No
Graphics Resolution (dpi):	60, 180
Unprintable Regions:	Top: 0.20, Left: 0.17, Bottom: 0.20, Right: 0.33

Printer Features



Font Information

Fonts	Font sizes
Pica	10, 12, 20, 24
Courier	12, 24
Elite	10, 12, 20, 24
CourierPS	12
ElitePS	10

Texas Instruments 850

The PRD file for this printer is available on the Supplemental Printer Disks. Word does not support enhanced print mode on this printer.

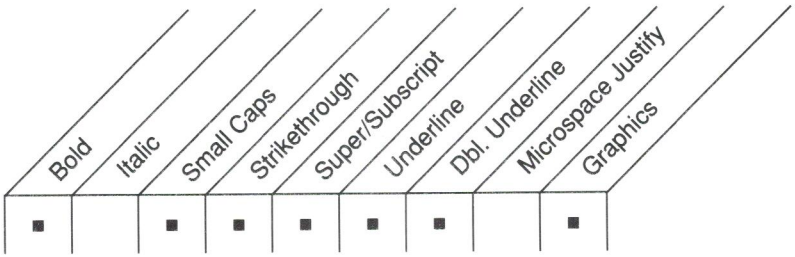
PRD File

TI850.PRD

Model Information

Model Name:	TI-850
IBM Graphics Characters:	No
Graphics Resolution (dpi):	60, 120, 240

Printer Features



■		■	■	■	■	■		■

Font Information

Italics substituted for underline.

Fonts	Font sizes
Pica	8, 12, 14, 16
PicaD	8, 12, 14, 16

Texas Instruments 855/857

For draft quality printing, use one of the TTY.PRD files.

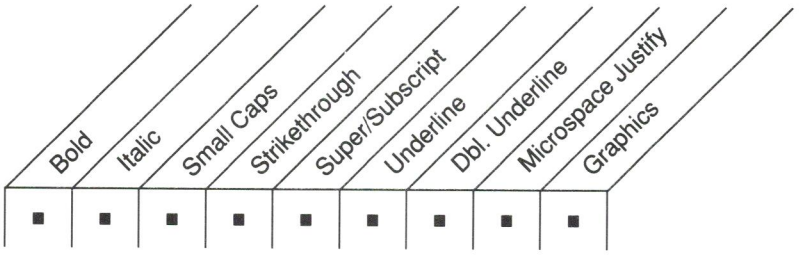
PRD File

TI855.PRD

Model Information

Model Names:	TI-857 (Color) TI-855
IBM Graphics Characters:	No
Graphics Resolution (dpi):	60, 120, 240 for TI-855 60, 120 for TI-857 (Color)

Printer Features



Font Information

This printer has four cartridge slots. The first digit of the font number indicates which slot the cartridge should be inserted into. When you specify Font2, the printer uses the cartridge in slot 2.

"PS" in a font name indicates a proportional font. "S" in a font name indicates a shadow font.

Italics are substituted for underline.

Fonts	Font sizes
Font1	8, 10, 12, 16, 20, 24
Font2	8, 10, 12, 16, 20, 24
Font3	8, 10, 12, 16, 20, 24
Font4	8, 10, 12, 16, 20, 24
Font115	6, 8, 9.5, 12, 16, 20
Font215	6, 8, 9.5, 12, 16, 20
Font315	6, 8, 9.5, 12, 16, 20
Font415	6, 8, 9.5, 12, 16, 20
Font1PS	8, 10, 12, 16, 20, 24
Font2PS	8, 10, 12, 16, 20, 24
Font3PS	8, 10, 12, 16, 20, 24
Font4PS	8, 10, 12, 16, 20, 24
Font1S	8, 10, 12, 16, 20, 24
Font2S	8, 10, 12, 16, 20, 24
Font3S	8, 10, 12, 16, 20, 24
Font4S	8, 10, 12, 16, 20, 24
Font115S	6, 8, 9.5, 12, 16, 20
Font215S	6, 8, 9.5, 12, 16, 20
Font315S	6, 8, 9.5, 12, 16, 20
Font415S	6, 8, 9.5, 12, 16, 20
Font1PSS	8, 10, 12, 16, 20, 24
Font2PSS	8, 10, 12, 16, 20, 24
Font3PSS	8, 10, 12, 16, 20, 24
Font4PSS	8, 10, 12, 16, 20, 24

Texas Instruments Omnilaser1 and Omnilaser 2108/2115

This PostScript printer uses the POSTSCRP.PRD file. For more information, see the "PostScript Printers" listing.

Toshiba P321, P321SL/341SL

Word supports this printer in the standard Toshiba mode.

This printer supports the IBM extended character set through decimal 175. It can print foreign characters, but line drawing and shading characters are not available. Word's format border feature uses vertical bars and hyphens to create paragraph borders. The line draw feature is not available.

Condensed printing and proportional spacing are not available.

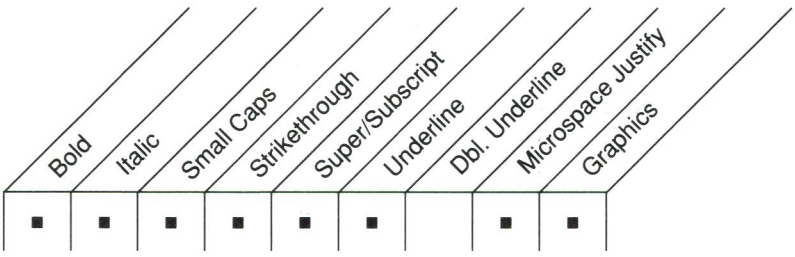
PRD File

TOSHP321.PRD

Model Information

Model Names:	Toshiba P321SL/341SL Color Toshiba P321SL/341SL Toshiba P321
IBM Graphics Characters:	No
Graphics Resolution (dpi):	180, 360
Bin Support:	Bins 1-2

Printer Features



Font Information

In PS fonts, sizes 15 and 16 do not justify perfectly.

Strikethrough does not work correctly in PS fonts.

Fonts	Font sizes
Pica	8, 10, 12, 15, 16
Courier	8, 10, 12, 15, 16
CourierPS	12, 16
Prestige	8, 10, 12, 15, 16
PrestigePS	10, 15
Cartridge1-1	8, 10, 12, 15, 16
Cartridge2-1	8, 10, 12, 15, 16
OutlinePS	12, 16
ScriptPS	10, 15
Cartridge6	8, 10, 12, 15, 16
Cartridge7	8, 10, 12, 15, 16

Toshiba P351/P351C

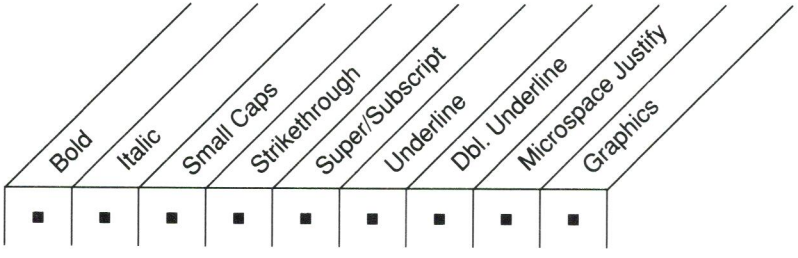
PRD File

TOSHP351.PRD

Model Information

Model Names:	Toshiba P351C (Color) Toshiba P351
IBM Graphics Characters:	No
Graphics Resolution (dpi):	180

Printer Features



Font Information

Fonts	Font sizes
Pica	8, 10, 12, 15, 16
Courier	8, 10, 12, 15, 16
CourierPS	12
Prestige	8, 10, 12, 15, 16
PrestigePS	10

Toshiba P351 SX/P351 SXC

Word supports this printer in Toshiba mode.

Format Border throws off the line spacing slightly in font size 10.

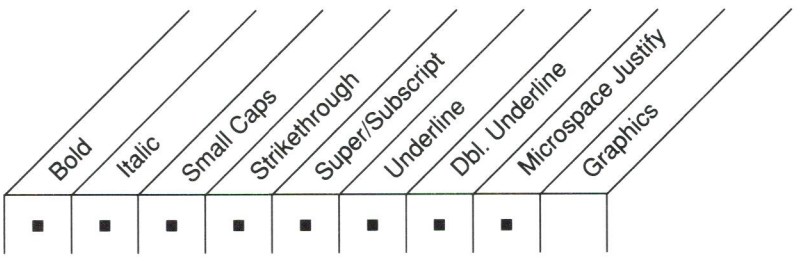
PRD File

P351SX.PRD

Model Information

Model Names:	Toshiba P351 SXC (Color) Toshiba P351 SX
IBM Graphics Characters:	No
Graphics Resolution (dpi):	180, 360
Bin Support:	Bins 1-3

Printer Features



Font Information

Fonts	Font sizes	Notes
Pica	8, 10, 12, 15, 16	
Courier	8, 10, 12, 15, 16	
CourierPS	12	
PrestigeElite	8, 10, 12, 15, 16	
LetterGothic	8, 10, 12, 15, 16	
LetterGothicPS	12	
PrestigeElitePS	10	
FontCard1	8, 10, 12, 15, 16	Requires optional font card
FontCard2	8, 10, 12, 15, 16	Requires optional font card
BoldFace	8, 10, 12, 15, 16	
BoldFacePS	12	
OutlinePS_Card1	12	Requires optional font card
ScriptPS_Card2	10	Requires optional font card

Toshiba P1340

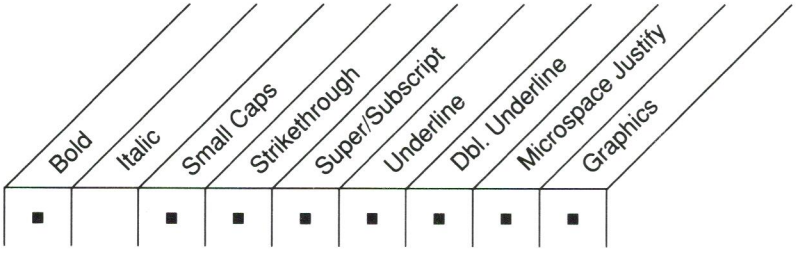
PRD File

TOSH1340.PRD

Model Information

Model Name:	Toshiba P1340
IBM Graphics Characters:	No
Graphics Resolution (dpi):	180

Printer Features



Font Information

Pica uses draft mode; Courier uses high-quality mode.

Fonts	Font sizes
Pica	8, 10, 12, 15, 16
Courier	8, 10, 12, 15, 16

Toshiba P1350/P1351

Condensed printing and proportional spacing are not available.

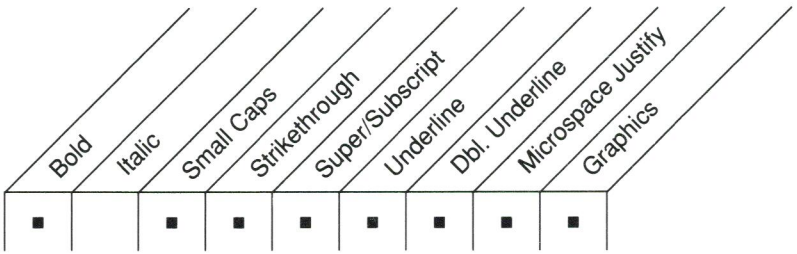
PRD File

TOSH1351.PRD

Model Information

Model Name:	Toshiba P1350/1351
IBM Graphics Characters:	No
Graphics Resolution (dpi):	180

Printer Features



Font Information

Pica uses draft mode; Courier and Prestige use high-quality mode.

Fonts	Font sizes
Pica	8, 10, 12, 15, 16
Courier	8, 10, 12, 15, 16
CourierPS	12
Prestige	8, 10, 12, 15, 16
PrestigePS	10

Toshiba PageLaser

This printer can autorotate fonts, and it supports duplex printing.

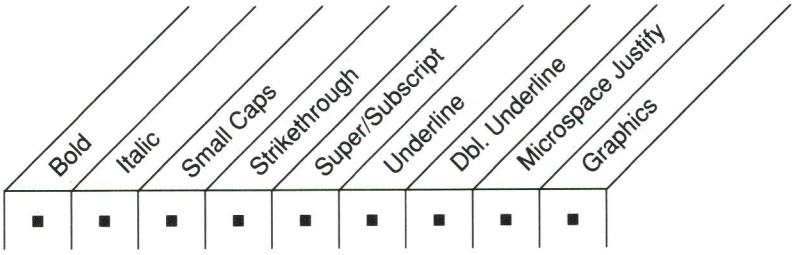
PRD Files

TOSHLAS1.PRD	For font cartridges that use the Roman 8 symbol set.
TOSHLAS2.PRD	For font cartridges that use the US ASCII symbol set.

Model Information

Model Name:	Toshiba PageLaser
IBM Graphics Characters:	No
Graphics Resolution (dpi):	75, 150, 300
Unprintable Regions:	Top: 0.20, Left: 0.17, Bottom: 0.20, Right: 0.33

Printer Features



Font Information

PRD Files	Fonts	Font sizes
TOSHLAS1.PRD		
	Courier	12
	LetterGothic[3/9]	8, 10
	LinePrinter	8.5
	HELVET II[3/9]	6, 8, 10, 12, 14, 14.5
	TmsRomn[3]	8, 10
	LineDraw[9]	12
TOSHLAS2.PRD		
	Courier	12
	CourierLegal[7]	12
	Prestige[6/7]	7, 10
	PrestigeLegal[6/7]	7, 10
	CourierPC[8]	12
	LinePrinterPC[8]	8.5
	LinePrinter	8.5
	HELVET[2/4/10]	6, 8, 10, 12, 14, 14.5, 18, 24
	TmsRomn[1/2]	6, 8, 10, 12, 14
	LineDraw[6/7/10]	10, 12

Xerox 2700 Laser Printer

The PRD file for this printer is available on the Supplemental Printer Disks.

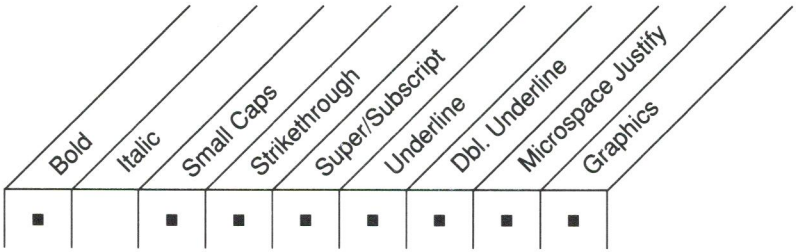
PRD File

X2700.PRD

Model Information

Model Name:	Xerox 2700
Line Drawing Font:	Forms
IBM Graphics Characters:	Yes
Graphics Resolution (dpi):	75, 150, 300
Bin Support:	Dual-bin sheetfeeder

Printer Features



Font Information

Because the Xerox 2700 can hold many different fonts, you need to know which fonts are loaded and format your document accordingly. Check the "font name" field in the Format Character command to see which font Word will use to format your text. If you ask Word to format in a font you have not loaded into the printer, the text will print in a different font.

The Xerox 2700 requires a font cartridge with italic fonts to print in italic. You also must purchase font cartridges to get various other fonts.

Some Xerox fonts use points and others use pitch (characters per inch) to indicate character size. Because Word uses points to indicate character size, some mismatching may occur if you use a pitch-measured font. To convert pitch to points, see the conversion table in "Pitch and Points," in the introduction to this chapter. Experiment with the "font size" field in the Format Character command to adjust the way your text prints.

Fonts	Font sizes
Titan	8, 10, 12
TitanB	10, 12
Elite	10
Vintage	10, 12
LetterGothic	8, 10, 12
Master	10
XCP	12
TitanI	10, 12
Kosmos	6, 8, 10, 12, 14
KosmosB	8, 10, 12
OCRA	12
OCRB	12
BoldPS	12
TrendPS	12
Classic	6, 8, 10, 12, 14
ClassicB	6, 8, 10, 12, 14
Spokesman	12
SymbolC	12
Forms	9, 10, 12
Chart	12

Xerox 4020

Word's Format Border feature is not supported on this printer.

Only full line space increments are supported (1, 2, 3, etc.). You cannot print text with fractional line space increments.

Black, red, green, blue, violet, magenta, and yellow are available.

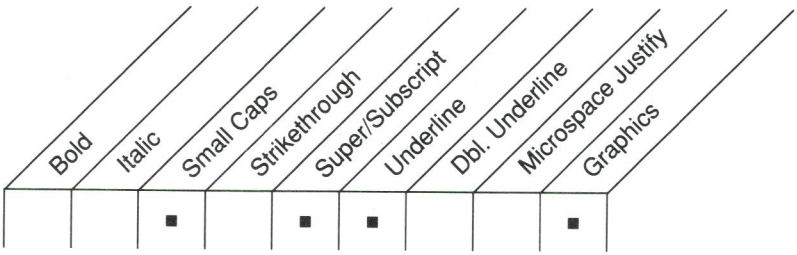
PRD File

X4020.PRD

Model Information

Model Name:	Xerox 4020
IBM Graphics Characters:	No
Graphics Resolution (dpi):	120

Printer Features



Font Information

Fonts	Font sizes
Pica	8, 10, 12, 13, 14, 16
Elite	10, 15
NLQ	8, 10, 12, 13, 15, 16

Xerox 4045

The PRD files for this printer that support downloading are available on the Supplemental Printer Disks.

Downloadable fonts and PRD files for this printer will also work with the Xerox 2700/3700 printers.

This printer does not support multiple font sizes on the same page in landscape orientation.

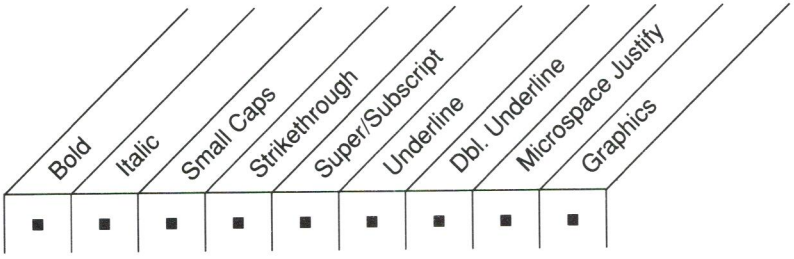
PRD Files

X4045PSP.PRD	Use for portrait mode.
X4045PSL.PRD	Use for landscape mode.
X4045.PRD	Use for cartridge fonts or if downloading the font yourself.
X4045DLP.PRD	Use for automatic downloading in portrait mode.
X4045DLL.PRD	Use for automatic downloading in landscape mode.

Model Information

Model Name:	Xerox 4045
Line Drawing Font:	Forms
IBM Graphics Characters:	Yes, X4045.PRD, X4045DLP.PRD, X4045DLL.PRD only
Graphics Resolution (dpi):	75, 150, 300
Unprintable Regions:	Top: 0.20, Left: 0.20, Bottom: 0.20, Right: 0.20

Printer Features



Font Information

All fonts for this printer may be purchased either as cartridge fonts or downloadable fonts. When you order downloadable fonts, request the PC disk format.

If you have fonts in cartridge form, omit the download process at the beginning of printing.

Word supports all fonts except Century-PS in both cartridge and downloadable forms. Century-PS is supported in downloadable form only.

The availability of italic, bold, and bold-italic varies by font and font size. When italic is not available, underline is substituted.

PRD Files	Fonts	Font sizes
X4045.PRD		
	Titan	8, 10, 12
	Elite	10
	Vintage	10, 12
	LetterGothic	8, 10, 12
	XCP	9, 10
	Helvetica	6, 8, 10, 12, 14, 18
	APLA	12
	OCRA	12
	OCRB	12
	BoldPS	12
	TrendPS	12
	Classic	6, 8, 10, 12, 14
	SymbolC	12
	Forms	8, 9, 9.5, 10, 12
	Chart	12

(continued)

PRD Files	Fonts	Font sizes
X4045DLP.PRD		
	Titan	8, 10, 12
	Elite	10
	Vintage	10, 12
	LetterGothic	8, 10, 12
	XCP	9, 10
	Helvetica	6, 8, 10, 12, 14, 18
	APLA	12
	OCRA	12
	OCRB	12
	BoldPS	12
	TrendPS	12
	Classic	6, 8, 10, 12, 14
	SymbolC	12
	Forms	8, 9, 9.5, 10, 12
	Chart	12
X4045DLL.PRD		(Same fonts as X4045DLP.PRD)
X4045PSL.PRD		
	Titan	12
	Universe	6, 8, 10, 12, 14, 18
	Times	6, 8, 10, 12, 14, 18
	CenturyPS	6, 8, 10, 12, 14, 18
X4045PSP.PRD		
	Titan	12
	Universe	6, 8, 10, 12, 14, 18
	Times	6, 8, 10, 12, 14, 18
	CenturyPS	6, 8, 10, 12, 14, 18

3 Tips and Troubleshooting

Tips

How to find out which characters are available on your printer

Most printers print out a self test that displays all the characters the printer can print. With Word, however, a self test is not definitive, because in many cases Word's PRD file supplies the printer with characters it can't print by itself. For example, if the printer does not have IBM extended characters available, Word's PRD file may supply them. Also, some printers have more than one full character set available. When that's the case, Word sometimes uses different character sets with different fonts.

The easiest way to discover exactly what your printer can print with Word is to use the *character_test.mac* macro in the file MACRO.GLY on Word Utilities disk 2. The macro uses the file CHARTEST.DOC also on Utilities disk 2. This macro prints out all the characters in a font and their corresponding ASCII code numbers. The code numbers are useful for characters that don't appear on the keyboard, which we call special characters. You can hold down the ALT key and type the code number on the keypad to produce a special character.

To use the macro:

1. Start Word and choose **T**ransfer **G**lossary **L**oad to load the MACRO.GLY file (located on Utilities disk 2). Make sure CHARTEST.DOC is on your hard disk or on a disk in a floppy disk drive.
2. Choose **I**nsert and press F1 to see the list of glossary entries. Select *character_test.mac* and press ENTER. The macro will start.
3. The macro will ask you if you want to print all of the available fonts. You can also select individual fonts.

How to print a bullet and other special characters

1. Determine which special characters are available on your printer and which ASCII code numbers they are assigned to. The *character_test.mac* macro described in the previous tip provides a list of special characters and their code numbers.
2. To enter special characters, hold down ALT and enter the special character's ASCII code number.

Sometimes, printing a special character can be confusing because the character on the screen doesn't match the character that prints. What prints as a bullet (a heavy dot used to call attention to items in a list), for example, may not look like a bullet on your screen. Special characters will look the same on your screen and when printed only if your printer uses the IBM extended character set. For a fuller and more technical explanation, see Appendix A, "Printing Special Characters."

Using macros to store special characters

If you often use special characters, you'll soon grow tired of using the ALT key and keypad each time you type a special character. As an alternative, you can store special characters as macros in a glossary. You can then use a CTRL key combination to type the special character — for example CTRL+B to produce a bullet.

You can make a special character macro even more helpful if you use it in conjunction with a style sheet you have created and attached to your document. Using a style sheet, you can ensure that a special character's formatting will match the formatting of the text it is placed in.

Include in the special character macro a keycode for a character style with the same character formatting as the Standard paragraph style. You can use different style sheets, as long as each one contains the styles assigned to the keycodes in the special character macros.

A macro for a bullet might look like this:

<ALT S>C
•

<ALT S>C assigns character style SC to the bullet (produced by holding down ALT and pressing 249 on the numeric keypad). You could call the macro *bullet.mac*^<*Ctrl B*>. To enter a bullet, you would then type CTRL+B.

Printing an em dash

In the character sets of many printers, an em dash is located at ASCII number 196. When that's the case, you can type ALT+CTRL+- to produce an em dash. Note that you cannot type ALT+196, as you would enter other special characters. If the em dash is assigned to a different ASCII number, you print it in the same way you print other special characters. To remap the em dash, see "Common PRD File Modifications" in Chapter 6, "Using the MakePRD Program."

How to print in landscape mode

Landscape orientation turns a page on its side (see the figure that follows). It can be useful if you want to print a wide table or an envelope.

How you go about printing in landscape mode depends on what type of printer you have. With some printers, you just need to change the page width and length settings in the Format Division Margins command. Other printers use separate PRD files for landscape printing.

Dot matrix printers

To print in landscape mode, just feed the paper (or envelope) in sideways. Wide-carriage dot matrix printers, which are designed to print in landscape mode, accept wide, landscape fan-folded paper. Narrow-carriage dot matrix printers are limited by the width of their carriage; often letter-sized paper is too wide to fit in sideways.

Laser printers

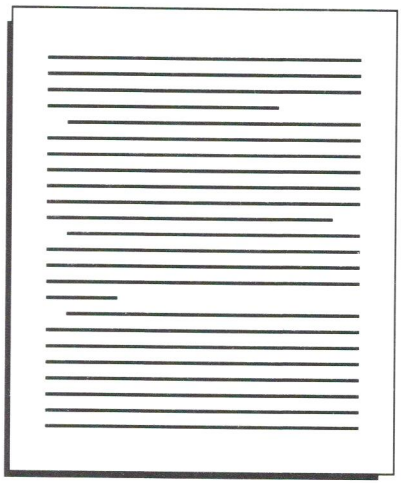
Most laser printers need special landscape fonts to print in landscape mode. Word uses landscape PRD files to support these fonts. If you use Word's Setup program to install one of these printers, Setup presents you with landscape and portrait choices. Once you've installed the PRD file you need and selected the proper printer in the "printer" field of the Print Options command, change your page length and width settings in the Format Division Margins command to reflect landscape margins.

If your printer has separate landscape and portrait PRD files, you can't mix portrait and landscape orientation in the same document. If you want to embed a landscape-oriented chart within a document, create the chart as a separate document.

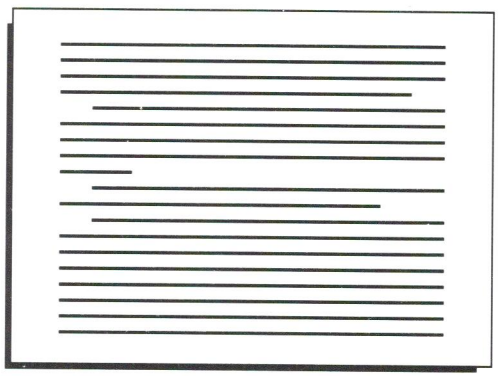
PostScript printers and printers with autorotation

PostScript printers and printers with autorotation do not require special landscape fonts since they can "rotate" any font to print in landscape orientation. Word does not use special PRD files for landscape printing with these printers. To print in landscape mode, you simply adjust the "page length" and "width" fields of the Format Division Margins command. For 8.5-by-11-inch paper, if the "page length" field is set to 8.5 inches, and the "width" field is set to 11 inches, the printer will print in landscape orientation.

One benefit of a printer's ability to rotate fonts is that you can easily mix landscape pages with regular portrait pages. Landscape pages must be separated from portrait pages by division marks.



Portrait



Landscape

How to improve a dot matrix printer's speed

You can make a dot matrix or similar printer print more quickly by printing in draft mode. To do so, choose **P**rint **O**ptions and select Yes in the "draft" field.

If you have a choice, use a parallel connection with your printer. A parallel connection transfers information more quickly than a serial one.

If you download fonts, remember that you don't have to download each time you print unless you use different fonts or font sizes.

How to avoid unnecessary printing

Often you have to print several drafts of a document to get it to look just right. By showing the layout of a document before it prints, Word's Print Preview feature can help you catch problems before you print a document.

How to ensure accurate margins on a dot matrix printer

Word gives you precise control over your margins, but if the paper in your printer isn't lined up properly, you won't get the margins that you set with Word.

An easy way to check the accuracy of your margins is to print a Word document with the left and top margins set to zero (in Word's Format Division command). If the paper is lined up properly, the printed document should have no left and top margins. If it does, you should change the paper's alignment. For example, if the document has a left margin, move the paper to the right and try printing again. You may need to experiment a few times to achieve a perfect "zero margin."

If the document has a top margin, you need to go through the similar process of moving the top edge of the paper closer to the print head and printing again until the document no longer has a top margin. On many dot matrix printers, the top edge of the paper should be just above the printer's ribbon.

How to get the best print quality from a laser printer

- Before using a heavy weight of paper, consult the printer manual to make sure the printer is capable of printing on it.
- If you want to print labels, use labels designed specifically for laser printing.
- Most laser printers can print transparencies. Be sure to use only transparency film designed for laser printing.
- Special paper is available for desktop publishing when the resolution of the type is important. This paper absorbs ink toner in a way that improves character definition.

  You can also reduce your output photographically (with a copier or special camera available at typesetting shops). Reduction makes characters and graphics appear sharper.

How to insert printer control codes into your document

Your printer manual may give the impression that you need to learn a whole new set of commands to use your printer, but you do not have to use printer control codes with Word. Each Word PRD file includes the printer control codes for the printer it supports. When Word prints a document, it automatically sends the printer control codes required to print the document in the way that you have formatted it.

Occasionally, however, you may want to access a special printer feature that Word does not support. For example, the LaserJet's PCL language has a number of features that Word does not exploit. You can access these features by inserting escape codes into a Word document. When the codes are sent to a printer, it will interpret them and perform the appropriate commands.

Guidelines for inserting printer control codes:

- Many printer commands begin with an escape character. To enter an escape character in Word, hold down ALT and type *27* on the numeric keypad. Then type the rest of the command.
- To enter printer control codes below ASCII 32, hold down ALT and type the decimal number of the control code.
- Some printers require that each printer command be on a separate line. Check your printer manual for more information.
- Do not enter font selection, line spacing, or page formatting control codes unless you are using a plain TTY PRD file. These codes will cause Word to print pages incorrectly.

How to send to the printer ASCII codes reserved for Word

This tip is for advanced Word users and programmers.

Word reserves some ASCII codes for its own use and uses others as printer control codes. Word uses ASCII 10, 11, and 12 as printer control codes. For example, if you type ALT+12 to access ASCII 12, Word will create a page break. If your printer's character set has assigned a character to ASCII 12 you normally will not be able to print that character.

The solution to this problem is to use Word's MakePRD utility program to assign ASCII 12 or any other code you wish to send to the printer to a different ASCII code. If you were to assign ASCII 12 to ASCII 175, for example, the printer would interpret each ASCII 175 code it received as ASCII 12. For information on how to remap characters, see "Common PRD Modifications" in Chapter 6, "Using the MakePRD Program."

Troubleshooting

This section is for when things go wrong. The first part presents common problems and their solutions. The second part answers frequently asked questions in a question and answer format.

You may have to do some experimenting with your printer to understand why a document doesn't print or why it prints incorrectly. In some cases, when you follow the steps to find and solve a problem, you need to try to print each time you try another step. If Word prints correctly, then you've solved it. If not, go on to the next step.

If Your Printer Doesn't Print at All

If your printer doesn't print at all, you may have installed the printer incorrectly, or there may be a mechanical problem with the printer. If you can't print with Word but have printed from other programs, then you need to check the settings in the Print Options command and also check for mechanical problems.

To check your printer

1. Make sure the printer is plugged in and turned on.
2. Make sure the printer is connected to the computer and is on line.

   Most printers have an "On Line" button and light to indicate when the printer is ready to receive data from the computer.
3. Make sure that the cable is connected properly and that you have the right cable for the printer. If your printer was not connected properly, reboot your system before trying to print again.
4. See if you need to change the ribbon, mount a print wheel or cartridge, or add paper.
5. If you have a serial printer, make sure the DOS or OS/2 MODE command was specified for your printer, and that the parameters within the command are correct. The parameters should correspond to the printer's settings, which are set with DIP switches or on the control panel.

   If you are running Word in OS/2 compatability mode and you have a serial printer, you need to run a utility program, Setcom40. At the command line, type: *setcom40 comx: = on*, where *comx* is the serial port (COM1: or COM2:) your printer is connected to.

6 If you still can't print, quit Word and try to print from the operating system level. (You cannot print from the operating system level with a PostScript printer.)

At the system prompt, type:

DIR > *port*

This command prints a listing of the files in your file directory. If your printer has a parallel connection, the *port* should be LPT1:, LPT2:, or LPT3:. If the connection is serial, the *port* should be COM1: or COM2:. Remember to include the colon at the end.

If you try printing to the wrong port, you may not be able to print to the correct port until you restart your system. If you still don't get output, even from the operating system level, you have a problem with the printer, or the cable. Try setting up the printer again. If this doesn't help, contact your printer manufacturer or dealer.

If your printer advances a few lines, then doesn't print

1 Check the "range" field in **P**rint **O**ptions. *All* prints the entire file, *Selection* prints only highlighted text, *Pages* prints only the pages specified in the "page numbers" field.

2 Check the "feed" field in **P**rint **O**ptions. Bin 1, Bin 2, Bin 3, and Mixed are used for sheet feeders; Continuous is used for printers whose paper is automatically fed without stopping. Make sure you specified the correct bin or feeder you want to feed pages from.

If You See a Message

If the printer displays a message or an error indicator, see your printer manual for information on how to correct the problem.

If Word displays the "Printer is not ready" message

1 Make sure the printer is plugged in and turned on.

2 Make sure the printer is connected to the computer and is on line. If the printer was not connected to the computer, restart your system before printing again.

If more than one computer uses a printer and printer access is controlled through a switchbox, make sure it is set to your computer.

3 Make sure that all printer switches are set correctly.

4. Make sure the cable is connected properly, and that you have the right cable for the printer. If the cable was not connected properly, restart your system before printing again.
5. See if you need to change the ribbon, mount a print wheel or cartridge, or add paper.
6. Look at the "setup" field in **P**rint **O**ptions to make sure it specifies the correct port. If you tried to print to the wrong port, you may have to restart your system before printing again.
7. Look at the "printer" field in **P**rint **O**ptions to make sure it specifies the correct PRD file for your printer.
8. Look at the "model" field in **P**rint **O**ptions to make sure it specifies the correct model name.
9. Check your printer for a paper jam.

If Word displays the "Formatting . . ." message, but doesn't print

1. Make sure the printer is connected and is on line.
2. See if you need to change the ribbon, mount a print wheel or cartridge, or add paper.
3. Look at the "range" field in **P**rint **O**ptions. If you chose Selection when no text was selected, then the line containing the highlight prints.
4. If you are using **P**rint **M**erge to create a form document, make sure the DATA statement is at the beginning of the main document. Make sure the specified data document is on the floppy disk or in the directory specified in **T**ransfer **O**ptions. Also check the main document to make sure the statements and instructions are set up correctly.
5. The document may be formatted as a running head. Check the left margin for caret (^) characters, which indicate paragraphs formatted as running heads.
6. Make sure the "line spacing" field in **F**ormat **P**aragraph is set to Auto or a value at least as large as the size of the font you are using.
7. See if your text is formatted as "hidden text." Hidden text has dotted lines underlining it (or may be represented as a color in text mode).
8. If the printer has a serial connection, make sure that the baud setting specified with the MODE command corresponds to the printer baud setting (or requirement).

If the Page Prints but is Formatted Incorrectly

You may find that Word and the printer can print your documents, but they don't look the way you expected.

If the pages are formatted incorrectly

1. Check your formats for accuracy, especially the "font name" and "font size" fields of **F**ormat **C**haracter.
2. You may have used the printer's control panel to select your font. Word is designed to handle font selection itself. Word sends the appropriate formatting commands to the printer. Using the control panel can give the printer conflicting instructions. Reset the printer and try printing again.
3. Check the printer manual or Chapter 2, "Supported Printers," to see if your printer can print the formats and fonts you want.
4. Make sure the correct PRD file is in the "printer" field of **P**rint **O**ptions; check the "model" field to make sure the correct printer model is specified; and check the "paper feed" field to make sure the right type of printer feed is specified.
5. See if your printer has hardware switches that set page length or line length. For example, the IBM Quietwriter has two settings for line length — 8″ and 13.2″.
6. If your document is formatted with many fonts, consult your printer manual to see if there is a limit on the number of fonts the printer can print on a page.
7. If you are using a font cartridge in your printer, check to see that the cartridge is tightly plugged in.
8. If a graphic is included in the document, the printer may not have enough memory to print it. Check the "resolution" field in **P**rint **O**ptions, and try printing at a lower resolution.

If Printer Output is Garbled

You may be able to get your document to print, but it may be garbled, totally unreadable, or it may contain extra characters before the text.

If printer output is garbled

1. Reset the printer: turn it off, wait five seconds, and turn it back on again.
2. Check the PRD file in the "printer" field of **P**rint **O**ptions. If the wrong PRD file is selected, the printer may insert stray characters at the beginning and end of lines. If the PRD file supports more than one model, make sure you have selected the correct model in the "model" field.
3. If you have a serial printer connection, check the DOS or OS/2 MODE command to make sure you specified the parameters that correspond to the printer's settings.

4. If you think you have selected the correct PRD file, try copying the file again from your original Word disks. The PRD file may have been damaged.
5. You can try another PRD file that seems compatible with your printer if the PRD file you set up still doesn't work. For example, if your printer is a Diablo, one of the PRD files for another Diablo printer may work with your printer.

   You can also try one of the TTY PRD files; see Chapter 2, "Supported Printers," for information on using these PRD files.

If you are using downloadable fonts, output can be garbled if your printer runs out of memory. See if you can allocate more memory. If this doesn't work, try using fewer fonts or smaller fonts.

If line draw characters don't print, or print as foreign characters

1. Check Chapter 2, "Supported Printers," or your printer manual to see if your printer supports IBM graphics characters.

   If it does, use the style sheet Line draw variant to select the recommended Line draw font for your printer.

   If the IBM graphics characters are not available, use the Format Border feature instead. Or you can choose a line draw character your printer can print. Select a new character in the "linedraw character" field of the **O**ptions command.

If the Printer Loses Text

If you have a serial printer and it prints the document but loses blocks of text, you may have a "handshake" problem.

To check for a "handshake" problem with a serial printer

1. If your printer offers a choice of handshaking protocols, make sure that it is set for the correct protocol. The protocol should be either ETX/ACK or XON/XOFF. Word expects most printers to use XON/XOFF. For Diablo printers or printers which emulate Diablos, the protocol should be ETX/ACK.
2. Check all switches on your printer against the printer manual to make sure settings are correct. Make sure these switches reflect the settings in your MODE command.
3. Check the baud rate and other parameters, and make sure you entered the information correctly when you used the DOS or OS/2 MODE command.
4. If you are still losing text, try using a lower baud rate than the one you're using now, and try to print again. Remember to change the baud parameter in the MODE command and change the baud setting on the printer.

If text prints but graphics do not

1. Check to see if the "draft" field in **P**rint **O**ptions is set to Yes.
2. If you're not sure, check to see if your printer supports graphics.

If Your Printer Runs Out of Memory While Printing Graphics

Graphics demand a lot of memory space, and your printer's memory may become so overloaded that the printer cannot finish printing your document. Your printer will alert you to this problem if it can display error messages.

1. Reset the printer.
2. Lower the resolution in the "graphics resolution" field of **P**rint **O**ptions.
3. If you are using downloadable fonts, format your document for fewer or smaller fonts. Reset the printer and try printing again.
4. If you still run out of memory, reduce the size of the graphic.

If You Still Can't Print

If you've tried everything, and still can't print your document, call Microsoft Product Support at (206) 454-2030.

You need to have this information ready:

- The name of the printer
- Whether the printer is serial or parallel
- What the **P**rint **O**ptions settings are
- Your Word 5.0 manuals

Printing Questions

- *How can I make Elite 10, for example, the default font?*

  Word uses the NORMAL.STY style sheet to set default formatting. With NORMAL.STY attached, format the "Standard" paragraph variant in Elite 10. Remember to save the style sheet before quitting Word.

- *When I change the font name and size, nothing happens. Why?*

  Changing font name or size is a two-step procedure:

  1. Select the text you want to format.
  2. Choose **F**ormat **C**haracter and go to the "font name" or "font size" field. Press F1 to see the fonts or sizes available. Press ENTER when you have made your choice or choices.

- *Why don't I get subscripts, superscripts, different fonts, or other character formats on my printer?*

  Probably your printer cannot print those formats. Check your printer's listing in Chapter 2. The Printer Features chart and Font Information table list the formatting capabilities of each printer.

  Sometimes a printer may be capable of printing a particular format such as italics but not in every font.

- *Why doesn't my printer print bidirectionally?*

  When Word performs microspace justification on some printers, the printers lose the ability to print in both directions.

  To turn off microspace justification, choose **P**rint **O**ptions and select Yes in the "draft" field.

- *Why is my left margin larger (or smaller) than what I set it to?*

  Word measures the left edge of the text from the leftmost position where the printer can print. Word assumes that the left edge of the paper in your printer is aligned with that position. So, if your left margin is too big or too small, you need to realign your paper. Do so by setting the "left" field to zero in the Format Division Margins command and experimenting with the paper alignment. When you have lined up the paper so that there is no left margin (a margin of zero), the paper is lined up properly.

- *Why doesn't the text print in the font I selected in the Format Character command?*

  The most common reason is that not all the characters were selected when you chose the Format Character command.

  If you are working with font cartridges, make sure the cartridge you're using is in the printer and tightly plugged in.

  If you're working with a PRD file that supports many cartridges or downloadable font sets, you may have chosen a font that isn't available on the cartridge or font set you are using.

- *Why isn't Word asking me to change print wheels anymore when I print with my daisywheel?*

  You may have the "draft" or "queued" fields of the Print Options command set to Yes.

- *How does Word use compressed and expanded fonts on a dot matrix printer? How does it use the printer's NLQ mode?*

  In Word, different print modes such as compressed, expanded, or NLQ, are listed as different fonts and font sizes. To print in NLQ mode, choose a font with an "NLQ" suffix. To use compressed and expanded modes, you need to format text as a smaller or larger font size. For example, suppose your printer offers 10-pitch Pica in compressed and expanded modes. If you pressed F1 in the "font size" field of the Format Character command, you would see 10, 12, and 14 listed. Those sizes are in points (to convert pitch to points, see "Pitch and Points" in Chapter 2, "Supported Printers"). Ten-pitch Pica is equivalent to 12-point Pica. To print Pica in compressed mode, you would format the text in Pica 10 (a 10-point font size prints at 12 pitch). To print Pica in expanded mode, you would format the text in Pica 14 (a 14-point font size prints at 8.5 pitch).

- *Why is the color graphic I imported into Word coming out black and white?*

  If your printer is capable of printing color, you may need to select the color model in the "model" field in the Print Options command.

4 Downloading Fonts

Overview

Word supports many printers that accept downloadable fonts. A downloadable font is a file of information that tells the printer how to create a font. The file is stored on disk and then transferred (or "downloaded") to the printer when you want to use the font. Downloadable fonts are not part of the Word package. They are purchased separately from a font manufacturer.

Using downloadable fonts with Word is as simple as formatting your document and printing. Once you've set up your font files and are ready to print, Word asks if you want to download fonts. If you do, Word downloads the fonts required for your document and prints it.

Word supports a variety of downloadable fonts, including standard font sets for the Hewlett-Packard LaserJet family and Adobe PostScript downloadable fonts. In addition, many font manufacturers include programs with their fonts that give Word the information it needs to support them.

In this chapter you will learn about:

- Preparing to download
- Downloading procedure
- Downloading PostScript fonts
- Downloading to a LaserJet printer
- Troubleshooting

Preparing to Download

Before you can download, you should determine which Word printer files you need. Check your printer's listing in Chapter 2, "Supported Printers," to see if it has a PRD file that supports downloadable fonts.

What You Need

In addition to the downloadable fonts themselves, which must be purchased separately, you need the following files stored on Word's printer or utility disks:

- A PRD file for your printer that supports the downloadable fonts you want to use.
- A DAT file with the same filename as the PRD file, but with a .DAT extension.
- An INI (initialization) file with the same filename as the PRD file but with an .INI extension, if your printer requires it.

DAT files contain data Word's downloading program needs to download fonts.

PostScript printers and some other laser printers need INI files. To find out whether or not your printer requires them, see your printer's listing in Chapter 2, "Supported Printers." If you use Setup, associated DAT and INI files are automatically copied with the PRD file when you select a printer.

Required Organization of Font Files and Word Files

The PRD file, DAT file, INI file (if needed), and downloadable font files must be kept in the same directory.

The easiest way to keep your fonts and required PRD and DAT files together is to create a separate directory for them.

Printers Without PRD Files for Downloading

In some cases, a dot matrix printer may be able to accept downloadable fonts, but Word's PRD file for it does not support downloading. Your printer's listing in Chapter 2, "Supported Printers," indicates whether downloading is supported. If a PRD file does not support downloading, you can modify it so that it does. See "Common PRD File Modifications" in Chapter 6, "Using the MakePRD Program."

To store downloadable fonts on a hard disk

1. Create a fonts directory with the DOS or OS/2 command MKDIR. See your operating system manual for more information on the MKDIR command.
2. Copy your downloadable fonts to the fonts directory.
3. Copy the necessary PRD files and DAT files to the fonts directory. Copy the INI file if one is required.

Hint The first time you type a PRD filename in the "printer" field of the Print Options command, you must include the pathname (unless the PRD file is in the same directory as Word). The PRD file's directory then becomes the default directory in the Print Options command. If you use more than one PRD file, it's a good idea to put all your PRD files, even those that don't support downloading, in the same directory. That way, you won't have to specify a directory in the Print Options command when you change PRD files.

To store downloadable fonts on a floppy disk

1. Format a blank floppy disk.
2. Copy your PRD file, DAT file, and INI file (if necessary) to the disk.
3. Use the DIR command to check how much space is left on your disk.
4. Copy fonts onto the floppy disk, keeping in mind the space available, so that you don't try to copy more files than you have room for.

Downloading Procedure

When a PRD file that supports downloading is selected, Word prompts you with three options each time you choose the Print Printer command. You can download all the downloadable fonts your document is formatted for, you can skip downloading, or you can download just the fonts that haven't already been downloaded.

Word downloads only the fonts needed to format your document. Once you've downloaded those fonts, you don't have to download them again. Thus, if you print more than one draft of a document, you can skip downloading after the first draft. If you format a draft with an additional font, only the additional font will be downloaded. Once a font is downloaded, it remains in the printer's memory until you shut off or reset the printer.

To download fonts

1. When you are ready to print a document, choose **P**rint **O**ptions.
   In the "printer" field, type the filename of the PRD file that supports the downloadable fonts you want to use. You do not need to include the filename's .PRD extension.
2. Choose **P**rint **P**rinter to download fonts and print your document.
   Word displays a message: "Enter Y to download new fonts, A to download all fonts, N to skip."

   - If you press Y, Word downloads any fonts that haven't previously been downloaded in the current Word session. If you haven't downloaded previously, Word downloads all the downloadable fonts your document is formatted for.
   - If you press A, Word downloads all the downloadable fonts your document is formatted for. Any previously downloaded fonts are erased from the printer's memory.
   - If you press N, Word prints the document without downloading. If the fonts the document requires have already been downloaded, the document prints as formatted. If the required fonts have not been downloaded, the text formatted with them will print in a font the printer substitutes.

When Word downloads, the editing screen will disappear. You may be prompted to change disks or be asked if you want to continue or cancel. When downloading is completed, the editing screen will reappear and the document will print.

Printer Memory

If your document is formatted for many fonts, the downloaded fonts may take up too much room in the printer's memory and affect its performance. The printer may not be able to print graphics or may not be able to print at all. Many printers have restrictions on the number and size of fonts you can download at one time. Here are some tips for conserving printer memory:

- Fonts without "extended characters" (foreign characters and other characters not found on the keyboard) require less memory. Using fonts with only the basic keyboard character set can save considerable memory, especially with larger font sizes.
- Small font sizes require less memory than large ones.
- If memory is limited, consider using font cartridges, if your printer supports them. They don't require any extra room in memory.

Downloading PostScript Fonts

Word can support all of the more than 200 Adobe PostScript fonts currently available. Every PostScript printer that Word supports uses PSDOWN.PRD for downloading PostScript font files. PSDOWN.PRD has built-in support for ten fonts, and is designed to support any Adobe PostScript downloadable font.

To use the PostScript downloadable fonts that PSDOWN.PRD does not already support, you need to run the MergePRD program. MergePRD lets you choose which fonts you want to add or delete. You can delete any fonts that you don't need and add the fonts you want. If you need to use several groups of fonts for different purposes, you can create a new PRD file for each group.

MergePRD obtains the information it needs to support new downloadable fonts from Adobe Font Metrics (AFM) files supplied by Adobe. Word can support any font that has an AFM file or an equivalent file that conforms to Adobe standards.

For information on using MergePRD, see Chapter 5, "Using the MergePRD Program."

PostScript Printer Memory

When you use downloadable PostScript fonts you should be especially careful not to overload your printer's memory. PostScript fonts don't require a lot of memory, but the large INI file required by PostScript printers does.

As a rule of thumb, we recommend:

- With 512K memory, no more than three downloadable fonts in memory at a time.
- With 1 megabyte memory, no more than ten downloadable fonts in memory at a time.

Downloading to a LaserJet Printer

No special procedure is involved in downloading to the Hewlett-Packard LaserJet family of printers and printers that emulate them. But if you have one of these printers, this section may help you manage your downloadable fonts.

Temporary and Permanent Fonts

Hewlett-Packard LaserJet and compatible printers distinguish between *permanent* and *temporary* downloadable fonts. A permanent font remains in the printer's memory until the printer is shut off. A temporary font remains in memory until a reset command is sent to the printer or the printer is shut off.

Word's download data files, the DAT files, set up downloaded fonts as temporary fonts. When you select the A option to download all fonts, Word's downloading program clears previously downloaded temporary fonts. This method has several advantages:

- You can download a set of fonts for one document, and then download a different set for another document without having to shut off the printer or fill its memory with unnecessary fonts.
- If you print several drafts of a document or several documents formatted with the same fonts, you do not have to download fonts each time you print. After you download the fonts the first time, they remain in the printer's memory until you shut off or reset the printer. If, after printing a draft, you decide to format the document with an additional font, you can download just that font.
- Word can work with downloaded permanent fonts, which are especially useful for network users. Word does not clear permanent fonts from the printer's memory.

In some situations, it makes sense to download fonts as permanent fonts. For example:

- If your printer is shared by a network, and everyone on the network uses the same downloaded fonts, permanent fonts have to be downloaded only once. If the downloaded fonts were temporary, each user would have to download them individually. Also, temporary fonts would be cleared each time any network user downloaded fonts with Word's downloading program.
- If you are using Word along with an application that resets the printer, downloading fonts as permanent fonts will save you from having to download them frequently.

Downloading fonts as permanent fonts

Most downloadable fonts for the LaserJet family and compatibles come with a downloading utility program that lets you download fonts as permanent fonts. Use this utility to download the fonts before you start Word. Then, when you print with Word, skip the downloading process.

LaserJet Tips

- The LaserJet+ and 500+ do not accept fonts larger than 30 points. If you try to print text formatted in a larger size, you may lose characters.
- The LaserJet+, 500+, and Series II printers allow 32 downloadable fonts in memory at a time. You can use up to 16 fonts per page. Different font sizes and styles are considered separate fonts. For example, Courier 12 and Courier 14 are two different fonts, and Courier 10 Italic is a third.
- The LaserJet IID can print an unlimited number of fonts on a page.

Troubleshooting

The following messages may appear when you run Word's downloading program.

- *xxxxxxx.DAT was not found. The file must be in the same directory as the PRD file. Press any key to resume Word.*

  Word was unable to find the required DAT file. Copy the DAT file to the same directory as the PRD file and download again.

- *Download file xxxxxxxx.xxx was not found. Insert font disk in drive A: and press any key to retry. Otherwise press C to change the directory, S to skip, or ESC to exit.*

  Word can't find one of the files containing the downloadable fonts. If you are using Word on a floppy disk system, replace the Word disk with the disk containing the download files and press any key.

  If you press C, Word will prompt you for the drive and directory where your downloadable font files are stored (for example, C:\WORD\FONTS).

  If you press S, Word stops trying to download the font. The document will print and the text formatted in the downloadable font will print in a font the printer substitutes. Your document margins may be incorrect.

  If you press ESC, Word stops trying to download and cancels printing.

- *Font download unsuccessful.*

  Word cannot complete transferring fonts to your printer. Before you try to download again, confirm that your printer is connected properly and that the "setup" field of the Print Options command shows the correct port. For serial printers, also confirm that the settings set with the operating system MODE command match your printer's handshake settings.

  Some printers have many fonts but can load only a few into memory at once. If you try to load more fonts than can fit into printer memory, you may see an error indication on your printer. Only those fonts sent successfully to your printer are available. Any fonts sent after the error are not available.

- *Downloading fonts . . .*

  Word is downloading fonts. When the fonts are downloaded, the program returns you to the Word screen.

- *Insufficient memory.*

  There isn't enough memory to run Word's downloading program. This situation can occur if you are running a RAM-resident program, or if you are running Microsoft Windows and your Word PIF file settings are incorrect.

5 Using the MergePRD Program

Overview

MergePRD is a Word utility program that provides a way to make several useful modifications to your PRD files. You can use MergePRD to combine fonts from different PRD files that support the same printer or to add support for downloadable PostScript fonts. MergePRD also allows you to change the font Word uses for line drawing and to add support for sheet feeders. LaserJet users can use MergePRD to change the symbol set of fixed-pitch fonts.

This chapter includes several procedures for using MergePRD to do different tasks. A reference section at the end of the chapter describes MergePRD's Main Menu and the Select Fonts and Font Sizes menu.

When to Use MergePRD

Here are some reasons to use MergePRD:

- To create a new PRD file that supports a combination of downloadable, cartridge, and built-in fonts.

  Example: you want to print a document that uses both downloadable fonts and fonts from a font cartridge. MergePRD can create a PRD file that supports the exact combination of fonts you want to use.

- To use downloadable Adobe PostScript fonts or built-in PostScript fonts that Word PostScript PRD files do not already support.

  Example: you have purchased some downloadable Adobe PostScript fonts that the PSDOWN.PRD file does not support. You can use MergePRD to add support for those fonts to PSDOWN.PRD and to delete the fonts you don't use.

- To delete unwanted fonts or font sizes from a PRD file.

  Example: you use the HPLASER1.PRD file to support the LaserJet "A" font cartridge you have purchased. HPLASER1.PRD also supports fonts for several other cartridges. Since you don't use those other cartridges, you can delete their fonts to avoid accidentally formatting text in a font your printer doesn't print.

- To update a customized Word 4.0 PRD file.

  Example: you created a customized PRD file for Word 4.0, using the Word 4.0 version of MergePRD or MakePRD. You can use MergePRD to update it for Word 5.0.

- To add sheet feeder or envelope feeder support for your printer.

  Example: you have purchased a sheet feeder for your printer, but your printer's PRD file does not support a sheet feeder. MergePRD allows you to add sheet feeder support.

- To change the line drawing font.

  Example: a setting in your PRD file determines which font will be used to print Format Border boxes and lines, vertical lines, and revision marks. You might want to change the line drawing font if it can't print in bold and you have another font, perhaps on a font cartridge, that includes bold line drawing characters.

- To change the character set of a LaserJet fixed-pitch font.

  Example: several LaserJet models give you the option of using different character sets (also called symbol sets) with the same font. Different character sets give you access to a variety of symbols and foreign characters.

Note MergePRD cannot create fonts. It can only add support for fonts already available on the PRD files you are combining, or for Adobe PostScript fonts for which you have AFM files (provided by Adobe with the fonts).

When Not to Use MergePRD

There are some instances when it's not appropriate to use MergePRD:

- To combine PRD files that support different printers. For instance, if one PRD file supports an Epson printer and another supports a Hewlett-Packard LaserJet printer, the PRD files can't be merged. In some instances PRD files that support similar printers can indeed be merged, but you must be knowledgeable about printer driver files to know when combining such PRD files is possible. See the Note in the reference section at the end of this chapter for more information.
- To combine landscape and portrait PRD files. Some printers have separate PRD files for landscape and portrait printing orientation. On those printers, a document can have only one orientation. Printers that have an "autorotation" feature are an exception to this rule. For example, the LaserJet 2000 can do autorotation. Thus, for this printer, fonts supported in separate portrait and landscape PRD files could be merged into one PRD file.

Using MergePRD

MergePRD takes information from one or more PRD files and creates a new PRD file. Each time you use MergePRD, you must enter the PRD filename(s) for MergePRD to use, select fonts for the new PRD file, and issue the command to create the new file. You must follow these steps even if you use MergePRD just to modify an existing PRD file — to change the line drawing font, for example. To modify an existing PRD file, you actually make a new PRD file with the changes you desire and then give it the same name as the old PRD file.

Important Always work with backup copies of the original PRD files. That way, if you need to change a newly created PRD file, you'll still have the master to copy and work from.

This section presents the following procedures:

- To start MergePRD
- To combine fonts from different PRD files
- To add support for downloadable Adobe PostScript fonts
- To delete fonts from a PRD file
- To update a Word 4.0 PRD file
- To add sheet feeder support
- To change the line drawing font
- To change the character set of LaserJet fixed-pitch fonts

If you plan to work with a PRD file that has an associated DAT file (for downloading) or INI file, these files must be in the same directory as the PRD file.

Note If you use the OS/2 operating system, you must start MergePRD in DOS compatibility mode.

To start MergePRD

Word's Setup program copies MergePRD to the directory or disk where the Word program files are kept. MergePRD does not need to be stored in the same directory or on the same disk with the PRD files it makes use of. You can specify a PRD file's disk or directory pathname when MergePRD prompts you to type a filename. It's easiest to start MergePRD in the directory or disk where you keep your PRD files, however, so that you don't have to specify the pathname.

1. At the operating system prompt, type *mergeprd*
   You can also type the names of the PRD files you want to work with on the command line when you start MergePRD. For example:

   mergeprd hplaser1.prd hpdwnhlp.prd

2. The first MergePRD screen asks you for the type of printer you use — LaserJet or compatible printer, PostScript printer, or other.
   MergePRD presents these choices and assigns a number to each one. At the "Enter selection" prompt, type the appropriate number.

The printer type you select determines the choices MergePRD offers you. If you have a LaserJet or compatible printer, MergePRD gives you the option of changing the character set if more than one set is available. If you have a PostScript printer, you can add support for downloadable Adobe PostScript fonts.

Here is MergePRD's Main Menu:

```
MergePRD - Microsoft Word .PRD Merging Utility

                    Main Menu

1) Enter input .PRD list
2) Display the list of available fonts and font sizes
3) Print the list of available fonts and font sizes
4) Select fonts and font sizes
5) Display selected fonts and font size entries
6) Change bin support
7) Create the output .PRD file with the fonts you have selected
8) Quit program

Enter selection: _
```

The Main Menu entries are presented in the order you need to do the tasks they represent. For example, you always begin by telling MergePRD which PRD file or files to work with, and you use the first choice on the menu to do so.

To combine fonts from different PRD files

1. Type *1* at MergePRD's Main Menu prompt and enter the PRD filenames you want to work with.

   You do not need to include the filename's .PRD extension when you type the filename. If the PRD file is not in the same directory or on the same disk as MergePRD, include the appropriate pathname. MergePRD will continue to prompt you for filenames until you press ENTER to return to the Main Menu.

2. Type *4* at the Main Menu prompt to select fonts and font sizes.

   The Select Fonts and Font Sizes menu will appear. This menu varies according to the printer type you have selected. If you selected a LaserJet or compatible printer, the menu lets you change the character set of a font (if an additional set is available). If you selected a PostScript printer, the menu includes an option for adding support for downloadable Adobe PostScript fonts.

   Here is the menu for a LaserJet or compatible printer:

```
            Select Fonts and Font Sizes

1) Add font/size from .PRDs already entered
2) Change symbol set for font
3) Delete existing font/size entry
4) Display current font/size entries
5) Change linedraw font
6) Return to main menu

Enter selection: _
```

3. Type *1* at the Select Fonts and Font Sizes menu prompt to add fonts from the existing PRD files to the new PRD file.

   A list of all the fonts available on the PRD files you have chosen will appear. For example, here is a list of the fonts in the HPLASMS and HPDWNHLP printer driver files:

```
Font  PRD File   Font Name       Set
  0   HPLASMS    Courier          R8
  1   HPLASMS    CourierPC        P8
  2   HPLASMS    LinePrinter      R8
  3   HPLASMS    HELV             EC
  4   HPLASMS    TMSRMN           EC
  5   HPDWNHLP   Courier          R8
  6   HPDWNHLP   CourierPC        P8
  7   HPDWNHLP   LinePrinter      R8
  8   HPDWNHLP   Broadway         US
  9   HPDWNHLP   Bodini           US
 10   HPDWNHLP   University        US
 11   HPDWNHLP   Coronet          US
 12   HPDWNHLP   Cooper           US

Add - Enter Font # (0-12): _
```

The leftmost column assigns a number to each font listed. At the prompt, type the number of the font you want to add to the PRD file you are building.

You will then be prompted to type the sizes you want to use. When you press ENTER, MergePRD will ask you to type another font number.

Sometimes, different PRD files share the same font. When that's the case, you only need to add the font from one file. MergePRD does not allow you to add the same font twice. Some font cartridges support different sizes of the same fonts. To merge those fonts, you need to use Word's MakePRD program to change the name of one of the fonts. For information on changing font names, see Chapter 6, "Using the MakePRD Program."

If the PRD file supports more than one LaserJet font cartridge, the cartridge letter appears in brackets after the font names supported on the cartridge. For example, the Lineprinter font is supported by the C and L cartridges, so [C,L] appears after the font name. These cartridge letters will not appear in the new PRD file created with MergePRD.

When you have selected the fonts you want, type *6* to return to the Main Menu.

4. Type *4* at the Main Menu prompt to display the fonts and font sizes you have selected.

   If you forgot to add a font, or added one you don't need, you can return to the Select Fonts and Font Sizes menu to add or delete more fonts as needed.

5. Type *7* at the Main Menu prompt to create a new PRD file with the fonts you have selected.

   MergePRD will ask you to name the new PRD file; you can give it any filename you choose. You do not need to include the .PRD extension.

6. Type *8* to quit MergePRD.

To add support for downloadable Adobe PostScript fonts

Word has a special PRD file for downloadable PostScript fonts, PSDOWN.PRD, which supports 14 downloadable fonts. These fonts are listed under "PostScript Printers" in Chapter 2, "Supported Printers." If the font you want to download is not among those fonts, you can use MergePRD to add support for it.

Before starting MergePRD, make sure that the following files are stored in the same directory or on the same disk:

- PSDOWN.PRD
- PSDOWN.INI (or DECDOWN.INI if you have a DEC LN03R printer)
- PSDOWN.DAT
- The Adobe Font Metrics (AFM) files for the fonts you want to download. These files have the same filenames as the downloadable fonts, but they have the extension .AFM.

If you used Word's Setup program to select a PostScript printer (with downloading), these files (except for the AFM files) were automatically copied to your program disk or directory.

1. Make sure that each font file has a corresponding Adobe Font Metrics (AFM) file with the same filename. MergePRD requires an AFM file to add support for a font.

   Start MergePRD and type *2* at the welcome screen to inform MergePRD that your printer is a PostScript printer.
2. Type *1* at the Main Menu prompt, and type *psdown* as the input file. You will be prompted to select the appropriate printer model.
3. Type *4* at the Main Menu prompt to select fonts.
4. Type *1* at the Select Fonts and Font Sizes menu prompt to add fonts from PSDOWN.PRD to the new PRD file.

   A list of the fonts available in PSDOWN.PRD will appear. Select any fonts you want the new PRD file you are creating to support.

   Press ENTER to return to the Select Fonts and Font Sizes menu.
5. Type *2* to add a new downloadable font using an AFM file.

   First, you are prompted for the "base" font filename, and then for the filenames for italic, bold, and bold-italic.

   MergePRD next prompts you for the name of the Word font family the font belongs to.

   MergePRD then prompts you to assign a number to the font. The Font Assignment Table in Chapter 6 provides a guide for assigning the appropriate font number.

   Press ENTER to return to the Select Fonts and Font Sizes menu.
6. Type *6* to return to the Main Menu.
7. Type *7* at the Main Menu prompt to create a new PRD file with the fonts you have selected.

   You will be prompted for a filename. If you type *psdown*, PSDOWN.PRD will now support just the downloadable fonts you have added. Or you can type another name to create a new PostScript PRD file that supports the downloadable files you have selected.
8. Type *8* to quit MergePRD.

To delete fonts or font sizes from a PRD file

To delete fonts from an existing PRD file, you create a new PRD file that includes only the original fonts you want to keep.

1. Type *1* at the Main Menu prompt and enter the filename of the PRD file you want to delete fonts from.
2. Type *4* at the Main Menu prompt to select fonts and font sizes.
3. Type *1* at the Select Fonts and Font Sizes prompt to add the fonts and font sizes you wish to keep. The fonts you do not add will be deleted.

   If the PRD file supports more than one LaserJet font cartridge, the cartridge letter appears in brackets after the font names supported on the cartridge. For example, the Lineprinter font is supported by the C and L cartridges, so [C,L] appears after the font name. These cartridge letters will not appear in the new PRD file created with MergePRD.

   Press ENTER to return to the Select Fonts and Font Sizes menu.
4. Type *4* at the Main Menu prompt to display the fonts and font sizes you have selected. Check to see that you have selected all the fonts and font sizes you want to keep.
5. Type *6* to return to the Main Menu.
6. Type *7* at the Main Menu prompt to create a new PRD file with the fonts you have selected.

   MergePRD will ask you to name the new PRD file — you can give it any filename you choose. You do not need to include the .PRD extension.
7. Type *8* to quit MergePRD.

To update a Word 4.0 PRD file

To update a Word 4.0 PRD file, you need a Word 5.0 PRD file that supports the same printer. For example, if you have a customized Word 4.0 PRD file for the Hewlett-Packard LaserJet that supports a font cartridge and a downloadable font set, you can update it with any Word 5.0 PRD file that supports the LaserJet printers.

1. Start MergePRD and select the appropriate printer type.
2. Type *1* at the Main Menu prompt.

   Type the filename of a Word 5.0 PRD file that supports the same printer as the PRD file you want to update.

   Type the Word 4.0 PRD filename. Note that you must enter the Word 5.0 PRD file first. If you try to enter the Word 4.0 PRD file first, you'll get an error message.

   Press ENTER to return to the Main Menu.
3. Type *4* at the Main Menu prompt to select fonts.
4. Type *1* at the Select Fonts and Font Sizes menu prompt to add fonts.

   Add all the fonts from the Word 4.0 PRD file.

   Press ENTER to return to the Select Fonts and Font Sizes menu.

5 Type *6* to return to the Main Menu.

6 Type *7* at the Main Menu prompt to create a new PRD file with the fonts you have selected.

If you give the PRD file the same name as the Word 4.0 PRD file, MergePRD will overwrite the old PRD file.

7 Type *8* to quit MergePRD.

To add sheet feeder support

Before starting MergePRD, you need to check your sheet feeder or printer manual to find the control sequences to start and to stop using the sheet feeder. MergePRD will prompt you to enter those sequences.

1 Start MergePRD and select the appropriate printer type.

2 Type *1* at the Main Menu prompt and enter the filename of the PRD file you want to modify.

3 Type *4* at the Main Menu prompt to select fonts.

4 Type *1* at the Select Fonts and Font Sizes prompt to add fonts.

Add all the fonts and font sizes available.

Press ENTER to return to the Select Fonts and Font Sizes menu.

5 Type *6* to return to the Main Menu.

6 Type *6* at the Main Menu prompt to change bin support.

MergePRD will present a menu of options and prompt you for the one you want to add.

0 = Manual feed
1 = Bin 1
2 = Bin 2
3 = Bin 3
4 = Envelope feed

If you are modifying a PostScript PRD file, MergePRD will ask you if you want to add support for Bin 2.

When you have entered the appropriate number, MergePRD will prompt you to type sheet feeder beginning and ending control sequences.

Control sequences can be entered in decimal or hexadecimal form. You can also type *ESC* for the escape code. Hexadecimal codes must end with an "h." You can mix different numeric representations in one control sequence. For example, *ESC 12 2Fh*, where "12" is in decimal and "2Fh" is hexadecimal.

7 Type *7* at the Main Menu prompt to create a new PRD file with the bin support you have selected.

Type the filename of the PRD file you are modifying. MergePRD will overwrite the old PRD file and include the bin support you have selected.

8 Type *8* to quit MergePRD.

To change the line drawing font

You cannot change the line drawing font on a PostScript printer. The "Change line drawing font" menu choice is not available if you select a PostScript printer when you begin MergePRD.

1. Type *1* at the Main Menu prompt and enter the filename of the PRD file you want to modify.
2. Type *4* to select fonts and font sizes.
3. Type *1* at the Select Fonts and Font Sizes menu prompt to see the list of available fonts on the PRD file.

   Add all the fonts and font sizes.

   Press ENTER to return to the Select Fonts and Font Sizes menu.
4. Choose "Change line drawing font." Type the font number of the new line drawing font.

   Press ENTER to return to the Select Fonts and Font Sizes menu.
5. Type *6* to return to the Main Menu.
6. Type *7* at the Main Menu prompt to create a new PRD file with the line drawing font you have selected.

   Type the filename of the PRD file you are modifying. MergePRD will overwrite the old PRD file and replace it with one that supports the new line drawing font.
7. Type *8* to quit MergePRD.

To change the character set of LaserJet fixed-pitch fonts

You can change the character set (or symbol set) of fixed-pitch LaserJet fonts if another character set is available for that font. See the manual that came with your printer or with your fonts. The manual should also list the characters available in the different character sets. For fonts that are built in to the printer, the character sets also must be built in. Some downloadable fonts and font cartridges offer alternative character sets.

MergePRD allows you to change the character set of a proportional font such as Helvetica or Times Roman, but spacing for the extended characters will not be correct.

1. Start MergePRD and type *1* at the welcome screen to select a LaserJet printer.
2. Type *1* at the Main Menu prompt and enter the filename of the PRD file you want to modify.
3. Type *4* at the Main Menu prompt to select fonts.
4. Type *1* at the Select Fonts and Font Sizes menu prompt to add fonts.

   Add all the fonts and font sizes available.

   Press ENTER to return to the Select Fonts and Font Sizes menu.
5. Type *2* to change the symbol set.

   MergePRD will prompt you for the number of the font you want to change.

   A list of symbol sets will appear and you will be prompted to choose one.

6 Type *6* to return to the Main Menu.

7 Type *7* at the Main Menu prompt to create a new PRD file with the symbol set of one or more fonts changed.

Type the filename of the PRD file you are modifying. MergePRD will overwrite the old PRD file with the new symbol set selected.

8 Type *8* to quit MergePRD.

MergePRD Reference

Main Menu Choices

1) Enter input .PRD file list

Type the filenames of the PRD file or files you want to work with. If the files are not in the same directory or on the same disk as MergePRD, include the appropriate pathname. Press ENTER after each filename and to return to the menu. This menu entry disappears after you have added fonts (using menu entry 4) to the new PRD file MergePRD is building.

2) Display the list of available fonts and font sizes

Lists all the fonts available on the PRD files entered with menu entry 1.

3) Print the list of available fonts and font sizes

Lets you print, or save to a file, the list of fonts and font sizes available on the PRD files entered with menu entry 1. To print the list, type the name of the port your printer is connected to, for example, LPT1, COM1, etc. Do *not* include a colon at the end of the port names. That is, type *LPT1*, not *LPT1:*.

4) Select fonts and font sizes

Brings up the Select Fonts and Font Sizes menu. The menu lets you add or delete fonts and font sizes from the customized PRD file you are creating. A menu entry displays the current list of fonts you've added and changes the line drawing font, if desired. You add or delete a font by entering the number MergePRD assigns to it. This number is temporarily assigned by MergePRD and is different from the font number stored in the PRD file.

5) Display selected fonts and font size entries

Lets you look at the list of fonts and sizes you have added to the new PRD file.

6) Change bin support

Lets you add new bin support. You must know the appropriate control sequences for controlling the sheet feeder.

7) Create the output .PRD file with the fonts you have selected

Creates a new PRD file and saves it on your floppy disk or hard disk directory. It will be saved on the same hard disk directory MergePRD is on unless you specify a pathname.

8) Quit program

Exits MergePRD and returns to the operating system (or to Word if the Library Run command was used). If you quit without saving your new PRD file, it will be lost.

Select Fonts and Font Sizes menu choices

This menu varies according to the printer type selected; therefore, the menu choices are not numbered here.

The "Change symbol set" for font entry is available only if you have selected a LaserJet or compatible printer.

"Add a new download font using an Adobe Font Metrics File" is available only if you selected a PostScript printer.

- Add font/size from .PRDs already entered

  Adds fonts to the new PRD file. You must always add fonts when you use MergePRD. Otherwise, the new PRD file won't support any fonts.

- Change symbol set for font

  This menu entry is available only if you select a LaserJet or compatible printer when you start MergePRD. If more than one symbol set is available for a LaserJet fixed-pitch font, you can use this menu entry to change it. MergePRD will let you change the symbol set for proportional fonts (for example, Times Roman or Helvetica), but spacing for extended characters will not be accurate.

- Add a new download font using an Adobe Font Metrics File

  This menu entry is available only if you select a PostScript printer when you start MergePRD. It allows you to add support for downloadable Adobe PostScript fonts. MergePRD uses information stored in Adobe Font Metrics files to add support for fonts. Adobe Font Metrics files are supplied by Adobe with the downloadable font files.

- Delete existing font/size entry

  Once you have added fonts (using the first entry on this menu), you can use this entry to delete them if you wish.

- Display current font/size entries

  This menu entry lets you check which fonts you have added to the PRD file you are creating with MergePRD.

- Change linedraw font

  This menu entry is not available if you select a PostScript printer when you start MergePRD. Use this entry to change the setting in your PRD file that determines which font is used to create boxes and lines with the Format Border command, vertical lines created with tab stops, and revision marks. You might want to change the line drawing font if it can't print in bold and you have another font, perhaps on a font cartridge, that includes bold line drawing characters.

- Return to Main Menu

  Returns you to the MergePRD Main Menu.

Note All PRD files must have identical entries for the following parameters: *dxaMin, dyaMin, PrinterType, Microspace, SpecialFlags, and SerialInterface*. If any PRD file has the *WidthTSwap* flag set, the output PRD will also have this parameter set. If one input PRD file requires an INI file, every PRD file entered will also require one. If a PRD file violates any of these rules, it will not be accepted by MergePRD. For more information on these parameters, see Chapter 6, "Using the MakePRD Program."

6 Using the MakePRD Program

Overview

The MakePRD program provides a way to create and modify printer driver (PRD) files. Advanced Word users, programmers, and printer manufacturers may find MakePRD useful. MakePRD is on Utilities disk 2.

You don't need to use MakePRD to print with Word. Even if Word does not have a special PRD file for your printer, you can use one of the generic TTY printer driver files. If your printer emulates an industry-standard printer, such as the Epson FX, Diablo 630, or Hewlett-Packard LaserJet, you may be able to use one of their PRD files. For more information, see "Using Unsupported Printers" in Chapter 1, "Using Word with Printers."

About MakePRD

MakePRD converts an existing binary PRD file into a text file. You can load an existing PRD file into Word, modify it, then convert it back to a binary PRD file. MakePRD also lets you create a new text PRD file and then convert it to a binary file Word can use.

If you want to use PRD files from previous versions of Word, you need to update them, because the PRD file formats differ. The easiest way to update PRD files is to use MergePRD. See Chapter 5, "Using the MergePRD Program," for the procedure.

If you modified a PRD file from a previous version of Word to support a special selection of fonts, you can use MergePRD to transfer those fonts to a Word version 5.0 PRD. See Chapter 5, "Using the MergePRD Program," for more information.

Important If you use MakePRD to change PRD files, always make a copy of the original PRD files first. Read this chapter to learn about altering PRD files, and make sure you know the technical details of how your printer operates before you proceed.

To modify a PRD file

1. Consult the technical reference guide provided by the printer manufacturer. It will give you information on the different commands and control codes your printer uses.
2. Read the "Text File Format" section of this chapter carefully before attempting to modify a PRD file.
3. Decide which PRD file would work best with your printer. For example, you could use EPSONLX.PRD with any of the Epson LX series of printers. If you are not sure which PRD file to use, use TTY.PRD.

4. Always make backup copies of any PRD file you want to modify. Then, if the new PRD file doesn't work, you'll still have a copy of the original.
5. Run the MakePRD program to convert the existing binary PRD file into a text file. (Running MakePRD is described in the next section.)
6. Choose **T**ransfer **L**oad to load the text file into Word as a normal document.
7. Make the necessary changes to the text file. What you change depends on which formats you are implementing and the nature of your printer. For more information, see "Text File Format," later in this chapter.
8. Choose **T**ransfer **S**ave and select Text-only in the "format" field to save the text file as an unformatted Word document.
9. Run the MakePRD program again to convert the text file back into a binary PRD file. Give the file a new name to avoid overwriting the original PRD file.
10. Copy the new PRD file to your Word disk.
11. Start Word.
12. Choose **P**rint **O**ptions and enter the filename of the new PRD file in the "printer" field.
13. Test the new PRD file by printing several documents. If you find a problem, go back to step 1 and repeat this procedure, making additional changes until the printer works to your satisfaction.

Running MakePRD

To run MakePRD

1. Insert a copy of Word Utilities Disk 2 into drive A.
2. At the operating system prompt, type *makeprd*
   MakePRD prompts you for a PRD filename.

   Note You can exit the program by pressing ESCAPE whenever the program is waiting for input.

3. Type the filename of the PRD file you want to convert (for example, *TTY.PRD*, or *C:\PRINTERS\TTY.PRD*). If you are converting from a text file to a binary PRD file, enter the name of a PRD file, even if it doesn't yet exist, and include the .PRD filename extension.
   MakePRD prompts you for a text filename.
4. Type a name for the text file (for example, *TTY.DOC*).
   MakePRD asks if you are converting from a text file to a PRD file or vice versa.
5. Type *t* to create a text file, or *p* to create a PRD file.
   MakePRD creates the file requested, displays a message telling you the conversion is complete, and returns you to the operating system prompt.

You can also run MakePRD by typing:

makeprd/switch prdfilename textfilename

The switch may be either /P to convert from text to PRD file format, or /T to convert from PRD format to text. For example, you could create a text file from the TTY.PRD file by typing:

makeprd/T tty.prd tty.doc

Text File Format

Once you create a text file and load it into Word, make sure you understand the text file format before you make any changes.

The PRD text file is organized into eight sections:

The Header	Describes the printer hardware and gives details about the printing interface.
The Model Block	Describes the capabilities of each printer model the PRD file supports.
Font Description	Describes each font and size available.
Character Width Table (CWT)	Defines the width of the characters for proportionally spaced (PS) fonts.
Character Translation Table (CTT)	Describes how to produce characters that are not normally found on your printer.
Printer Control Sequence Description (PCSD)	Contains codes for controlling character formats, margins, and sheet feeder options.
Graphics Device Description	Describes the graphics printing capabilities of the printer.
Graphics Device Procedures	Describes procedures necessary for raster/vector printers. Word currently uses this section primarily for PostScript PRD files.
Strings	Contains codes for and information about the devices in the Graphics Device Description section.

Not every PRD file has all of the foregoing sections. For example, a PRD file does not need a Graphics Device Description section if the printer it supports does not have graphics capability. But every PRD file needs the following sections: Header, Model Block, Font Description, and Printer Control Sequence Description.

Before you start modifying the text file, you need to know which control codes your printer requires, as well as other technical information about your printer. This information is usually provided in your printer manual. If you do not understand the information in your printer manual, ask your dealer or printer manufacturer for clarification. Microsoft Product Support personnel cannot provide information about printers whose drivers are not included with Word.

If you want to add or change a character format, you need to enter the control codes your printer requires for the desired format. For information about how to enter codes for adding subscripts, superscripts, sheet feeder controls, bold, italic, underline, and other formats or capabilities, see "Printer Control Sequence Description," later in this chapter.

If you want to support a proportional font, enter the font's character widths in a Character Width Table (CWT). For more information, see "Character Width Table," later in this chapter. For fixed-width fonts, enter the widths at the *Wtps* flag in the Font Description section.

Most PRD files use units of twips for space measurements. A twip is 1/20 point or 1/1440 inch.

Laser printer PRD files don't use twips. The basic unit of measurement for laser printers is 1/300 inch, which corresponds to the number of dots per inch laser printers can print.

The Graphics Device Procedures section is not described in this chapter because of its complexity. If you wish to write Graphics Device Procedures, Microsoft can provide a special kit. Contact Microsoft for more information.

The next section describes how to enter control codes in a text file. Then, each section of a PRD text file format is described — except for the Graphics Device Procedures section. A complete sample PRD text file is listed later in this chapter.

Entering Control Codes

Control codes for your printer are entered in the Font Description, PCSD, and Graphics Device Description sections of the PRD text file.

Control codes consist of characters preceded by a caret (^). The caret indicates that the following character will be sent to the printer as a control character (as if the CONTROL key were pressed).

For example, you enter "^O" to send a CONTROL+O.

Converting Control Codes

If the control code to be sent to the printer has a decimal value of less than 32, you need to convert the control code. To convert, add 64 to the decimal value of the control code, and look up the sum in an ASCII table. Then use the ASCII character in the table that the sum represents.

For example, the decimal representation of ESCAPE is 27. If you add 64 to 27, the sum is 91. Look up decimal 91 in an ASCII table. It corresponds to the left square bracket [. Therefore, the control code for ESCAPE is: ^[. Many printers use the ESCAPE character plus various letters for control codes. To send an ESCAPE+G, for example, you would type: "^[*G*"

Some newer printers have control codes between decimal 128 and 159. You can enter the decimal, hex, or octal values of these codes.

For decimal values, the control sequence starts with a caret followed by a zero, then a "d" (for decimal) and the decimal representation of the character.

For example, the control sequence for 159 in decimal is: *^0d159*

For hex values, the control sequence starts with a caret, followed by a zero, then an "x" for hex and the hex representation of the character.

For example, for the control sequence decimal 159, the hex equivalent is 9F, so the control sequence in hex is: *^0x9F*

For octal values, the control sequence starts with a caret, followed by zero, then the three-digit octal representation of the character.

For octal values, a space terminates the octal number. You need to follow each number with a space before entering the next character in the control sequence.

For example, for the control sequence decimal 159, the octal equivalent is 233, so the control sequence in octal is: *^0233*

The Header

```
MAKEPRD 2.00
dxaMin:12 dyaMin:24 PrinterType:1
Microspace:0 SpecialFlags:0 SerialInterface:40960
WidthTSwap:1
```

A Header section

The Header section of the PRD file describes the type of printer used (dot matrix, daisywheel, laser, and so on), and includes information about printer head movement and printer interface.

The following are flags in the Header section.

dxaMin:# Minimum horizontal printer head movement, in twips (1/1440 inch), unless the printer is a laser printer (type 5, as defined in the *PrinterType* flag below). For laser printers, *dxaMin* should be set to 300.

For example, for a dot matrix printer, *dxaMin:1* indicates a minimum movement of 1 twip, or 1/1440 inch. For a laser printer, *dxaMin:300* indicates that the minimum printer head movement is 1/300 inch.

dyaMin:# Minimum vertical printer head movement, measured in the same way as *dxaMin*.

PrinterType:# Specify a printer type from 0 to 5.

0	MSPRINT-type PRD file
1	Dot matrix printer
2	Daisywheel printer
3	Other types of printers
4	PLAIN.PRD
5	Laser printers
6	Vector device, such as a plotter

Microspace:# Microspace justification flag.

0	Sets microspace justification.
1	No microspace justification.
2	No microspace justification in draft mode.
4	Half-width correction for proportionally spaced fonts.
6	No microspace justification in draft mode, and half-width correction for proportionally spaced fonts.
8	Allows minimum print head movement in units per inch (horizontal and vertical) rather than twips. This is similar to the *dxaMin* for printer type 5, but applies to both *dxaMin* and *dyaMin*. You must use this value for printer type 5.
16	Start width table scaling. See "Character Width Table," later in this chapter.
32	Don't use microspace justification between words.

SpecialFlags:# This flag tells Word whether or not the printer is operating in Adobe PostScript mode.

0	Indicates no PostScript mode.
2	Indicates PostScript mode.

For *PrinterType 0* (MSPRINT), use \ (backslash) instead of ' (apostrophe) as the text escape character for PostScript.

SerialInterface:# Serial interface flag. PRD files for parallel as well as serial printers must have this flag. If your printer uses a parallel interface, set the value to 0.

0	Parallel
49152	ETX/ACK-type communication protocol with timeout.
40960	XON/XOFF-type protocol with timeout.
53248	EXT/ACK-type protocol with no timeout (use for hardware handshaking).
45056	XON/XOFF-type protocol with no timeout.
4099	Use LPT1: or LPT2: as an "EPT" port for the IBM Personal Pageprinter 4216.

If you use an incorrect value, the printer buffer may overflow (after printing some text, you lose characters). Specify COM1: or COM2: in the "setup" field of the Print Options command for Word to handle the serial communication protocol.

WidthTSwap:# This flag tells Word to load one Character Width Table at a time. This is useful for saving memory when there are many width tables in a PRD file.

0	No swapping.
1	Indicates that you want width table swapping.

The Model Block

```
{M
cPMDs:1

InhibitCTT:0 InhibitRevLF:1
LinedrawAutoMap:0 LinedrawNoShade:1
LinedrawFlag:3 LinedrawFont:0 LinedrawAdjust:0
ColorMod:0 ColorFlags:0 DuplexFlag:0 OrientationFlag:0
AutoSkipTop:0 UnprintableTop:0
AutoSkipLeft:0 UnprintableLeft:0
UnprintableBottom:0 UnprintableRight:0
DownloadFlag:0
GraphicsNotSupported:NIL
FontsNotSupported:NIL
BinsSupported:0
IniFile:NIL
ModelName:Dot Matrix
}M
```

A model listing. There can be several within a Model Block.

The Model Block section is designed to let similar printer models with different capabilities share the same PRD file. Within the Model Block, descriptions of different printers are divided into separate model listings. Many PRD files have just one model listing. Each model listing contains information about the following capabilities and settings:

- Line drawing
- Color
- Duplex printing
- Downloading
- Orientation
- Unprintable regions
- Graphics
- Available fonts
- Bin and envelope feed support
- INI file name
- Model name

{M This code begins the Model Block.

cPMDs: # The number of printer models described in the Model Block. For example, if the Model Block contains listings for three models, this flag should read: *cPMDs:3*

InhibitCTT: # Indicates whether to refer to a Character Translation Table (or tables) for this model. For example, Word sometimes uses a Character Translation Table to supply the IBM extended character set for models that don't come with it. Models that have their own support for the IBM extended character set do not need this table.

The values for this flag are:

0 Use the Character Translation Table specified with the *CTP* flag for each font.

1 Ignore any references to a Character Translation Table specified with the *CTP* flag for each font.

InhibitRevLF: # Indicates whether the model has reverse line feed capability (which moves the paper backward instead of forward). If the model does not have this capability, Word does not send reverse line feed commands. Reverse line feed capability affects the way absolutely positioned text and graphics are printed.

The values for this flag are:

0 The model has reverse line feed capability.

1 The model does not have reverse line feed capability.

LinedrawAutoMap: # Indicates how to treat IBM graphics characters generated with Word line drawing features. If the printer does not support graphics characters, Word translates line drawing characters into underscore, vertical bar, and plus (+) characters.

The values for this flag are:

0 The model supports IBM graphics characters.

1 The model does not support IBM graphics characters, and no Character Translation Table is provided to create them. Line draw characters print as underline, vertical bar, and plus characters.

LinedrawNoShade: # Indicates whether the model can print the characters used for paragraph shading. Word uses three graphics characters from the IBM extended character set for paragraph shading: ASCII decimal numbers 176, 177, and 178.

The values for this flag are:

0 The model supports IBM graphics characters and can support paragraph shading.

1 The model does not support IBM graphics characters and cannot do paragraph shading.

LinedrawFlag: # Describes the model's line drawing capabilities for printing Format Border boxes and lines created with the Format Border command, vertical lines created by tab stops, and revision bars.

This flag does not affect the line draw feature.

The values for this flag are:

0	The model supports IBM graphics characters.
1	The model does not support IBM graphics characters. It can draw lines with the vertical bar and underline characters. Word uses the control sequence specified in the "set linespacing" sequence at bytes 18 and 24 in the PCSD section (described later in this chapter) to make the ends of vertical and horizontal lines meet.
2	The model does not support IBM graphics characters. It can draw lines with vertical bar and underline characters. No line spacing adjustment is made. (Either line spacing adjustment is unnecessary or the printer does not have a command available for line spacing in small increments.)
3	The model does not support IBM graphics characters. It can draw lines with the vertical bar and underline characters. The printer's vertical bar character is a "pipe character," which has a break in the center. Word fills the break in the pipe character by overlapping the characters.

For example, if a model cannot print IBM graphics characters and needs to adjust line spacing, the flag should read: *LinedrawFlag:1*

LinedrawFont: # Specifies the font to use for printing boxes and lines created with the Format Border command, vertical lines created with tab stops, and revision bars. The value of this flag can range from 0 to 63 and corresponds to a number assigned to a font in the Font Description section of the PRD file.

For example, to make the font defined as "F2" in the Font Description section the LinedrawFont font, this flag should read: *LinedrawFont:2*

This flag does not affect the font used for the line draw feature. The line draw font is assigned as a character format in Word, using direct formatting (the "font name" field in the Format Character command) or the Line Draw variant for a character style.

LinedrawAdjust: # How to adjust line drawing characters if the model prints Format Border boxes with overlapping top corners so that the sides of the box extend above the top. Most models do not require this adjustment, and for those models, this flag should read: *LinedrawAdjust:0*. The number for the flag must be entered in twips (1 twip = 1/1440 inch).

The exact effect of this flag depends on whether or not the model supports IBM graphics characters:

- If the model supports IBM graphics characters (*LinedrawFlag:0*), the flag number tells Word how far to push down the Format Border command's paragraph shading characters so they do not shade outside the top border.
- If the model does not support IBM graphics characters (*LinedrawFlag* is 1, 2, or 3), the flag number tells Word how far to push down the vertical bar characters so they join the horizontal underline characters when forming the top corners of Format Border boxes.

For example, to move the vertical bar characters down .05 inch, the *LinedrawAdjust* flag should read: *LinedrawAdjust:72*

Note If you enter an adjustment finer than the print head is capable of making, the flag will have little effect.

ColorMod: # Describes the model's color capability. If a model cannot print colors, the value for this flag should be 0.

The values for this flag are:

0	Monochrome. Black is the only color available.
1	Color. Red, green, blue, violet, magenta, yellow, white, and black are available.

ColorFlags: # Additional information about the model's color capabilities. The number of this flag, combined with the information in the *ColorMod* flag, determines which colors appear when you press F1 in the "font color" field of the Format Character command.

The values for this flag are:

0	Use all colors specified in *ColorMod*.
1	Use primary colors only (all colors but white).
2	White color is available. This number should be used only for models that can print white on a black or shaded background. A PostScript printer is an example of such a printer.

DuplexFlag: # Tells Word whether the model has duplex printing capability. Since few printers Word supports have this feature, this flag should be set to 0 for most printers.

The values for this flag are:

0	Printer does not support duplex printing.
1	Printer supports duplex printing.

OrientationFlag: # Tells Word whether the PRD file is for a portrait or landscape printer or whether the printer can rotate fonts.

The values for this flag are:

0	Portrait only.
1	Landscape only.
2	Printer can rotate fonts.

Unprintable Regions

An unprintable region is an area near the edge of a page in which a printer cannot print. Laser printers and printers that use sheet feeders typically cannot print all the way to the edge of the paper.

Word keeps track of unprintable regions to ensure that no text or graphics is sent to print in them. If you set your document's margins in the Format Division Margins command to less than the unprintable region, Word automatically increases them when it sends the document to print.

For example, if a printer can print only to within 0.25 inch of the left and right sides of a page, and the left and right margins in the Format Division Margins command are set to 0, Word will increase the left and right margins to 0.25 inch.

Word also uses information on unprintable regions to maintain consistency between printed margins and the margins set in the Format Division Margins command. If the unprintable left region is 0.25 and the left margin is set to 1.0 inch, the printed margin will also be 1.0 inch.

Some printers automatically skip over unprintable regions, while others simply lose whatever is sent to be printed there. To determine if a printer skips over the unprintable region, send a simple text file to the printer from DOS or OS/2 (using the COPY command) and see if any text is lost. If you lose text, the printer is not skipping over the unprintable region. If the model automatically skips over the unprintable region, set the AutoSkip flags to 1.

Word also uses information on a printer's unprintable regions to make adjustments so that the printed margins are the same as the values set in the Format Division Margins command. If Word did not make these adjustments, printers that skip over an unprintable region would increase margins by the size of the unprintable region.

The following six flags describe the model's unprintable regions.

- **AutoSkipTop: #** This flag should be 1 if the printer automatically skips over the unprintable region at the top of the page. Otherwise, it should be 0.
- **UnprintableTop: #** This flag measures the vertical distance from the top of the paper to the position where the printer is able to begin printing. This number is in twips. (Each twip is 1/1440 of an inch.)

  For example, if the model cannot print in the first .15 inch from the top of the paper, this flag should read: *UnprintableTop:216*
- **AutoSkipLeft: #** Set this flag to 1 if the model automatically skips over the unprintable region at the left edge of the paper. Otherwise, it should be 0.
- **UnprintableLeft: #** This flag sets the horizontal distance from the left edge of the paper to the position where the printer can print. This number is in twips.
- **UnprintableBottom: #** This flag measures the vertical distance from the bottom of the paper to the position where the printer stops printing. This number is in twips.
- **UnprintableRight: #** This flag sets the horizontal distance from the right edge of the paper to the position where the printer stops printing. This number is in twips.

DownloadFlag: # Indicates whether downloadable fonts are available. It also indicates whether an initialization (INI) file must be sent to the printer before printing. If downloadable fonts are available, Word looks for the DAT file that corresponds to the PRD filename. Note that the DAT file must always be in the same directory as the PRD file.

The values for this flag are:

0	No downloadable fonts are available.
1	Downloadable fonts are available, and Word needs to run its internal font downloading program to use them.
2	No downloadable fonts are available. Each print job must send an INI file to the printer.
3	Downloadable fonts are available, and an INI file must be sent to the printer before printing.
6	No downloadable fonts are available. An INI file must be sent to the printer with the first print job during a Word session.

For example, if a model can use downloadable fonts and Word needs to run its downloading program, this flag should read: *DownloadFlag:1*

GraphicsNotSupported: *dev# dev# dev#...* Indicates which graphics printing devices the model does not support. These are the devices listed in the Graphics Device Description section of the PRD file. A "device" is not necessarily a physical printer. See "Graphics Device Description," later in this chapter.

To mark a device as not supported, enter the device number assigned in the Graphics Device Description section of the PRD file. Leave a space between device numbers. Up to 16 devices can be described in the Graphics Device Description section, and all of them may be marked as "not supported."

If the model supports all the graphics devices described in the PRD file, set the flag to: *GraphicsNotSupported:NIL*

For example, if dev2, dev4, and dev6 are not supported, the flag should read: *GraphicsNotSupported:2 4 6*

FontsNotSupported: *font# font# font#...* Some models do not support all the fonts described in the PRD file. This flag marks which fonts the model does not support so that they are not listed when you press F1 in the "font name" field of the Format Character command.

To mark a font as not supported, enter the font number assigned to it in the Font Description section of the PRD file. Leave a space between font numbers. All the fonts described in a PRD file — except the default font (F0) — can be marked as not supported.

If the model supports all the fonts described in the PRD file, set the flag to: *FontsNotSupported:NIL*

For example, suppose the model does not support Elite, Helvetica, and Times Roman, and these fonts are numbered F2, F8, and F24 in the Font Description section. To mark them as not supported, the flag should read: *FontsNotSupported:2 8 24*

BinsSupported: *0 1 2 3 4* Indicates whether the model supports manual paper feed, sheet feeding bins, or envelope feed. Each number after the flag corresponds to a paper feed capability. To indicate that a model has a capability, list the equivalent number.

Here is the correspondence between the numbers and the capabilities:

0 = Manual feed
1 = Bin 1
2 = Bin 2
3 = Bin 3
4 = Envelope feed

For example, if the model has two bins and an envelope feed capability, the flag should read: *BinsSupported:1 2 4*

If the model has a single sheet feeding tray, with manual feed capability, the flag should read: *BinsSupported:0 1*

If the model has none of the capabilities described by this flag, set the flag to read: *BinsSupported:NIL*

IniFile: *filename* Gives the filename of the initialization file that Word uses for this model. If no initialization file is needed, set the flag to read *IniFile:NIL*

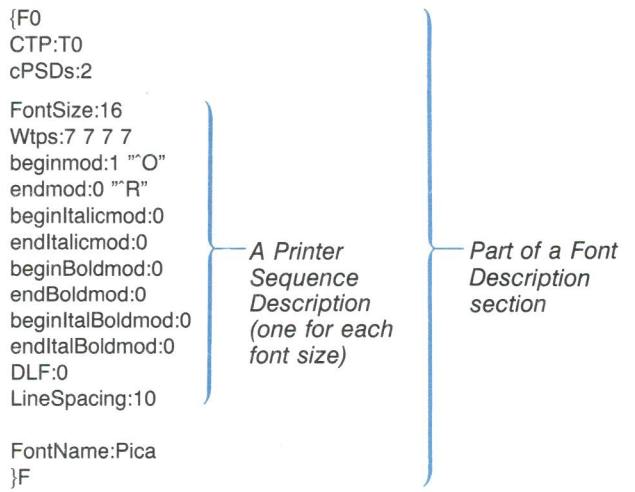
For example, to print with the IBM Personal Pageprinter 4216 in portrait mode, Word first must send the file IBMLASER.INI. For this printer, the flag should read: *IniFile:IBMLASER.INI*

On the other hand, the Epson FX-85 model does not require an INI file, so for that model the flag should read: *IniFile:NIL*

ModelName: *name of model* Contains the name that appears in the "model" field of the Print Options command. The name can be up to 26 characters long and can be any combination of characters, including spaces. It is terminated by a carriage return (paragraph mark).

}**M** This code ends the Model Block section.

Font Description



The Font Description section of the PRD file describes the fonts and font sizes available for the printer.

{F# This code marks the beginning of a font description. The first font, F0, defines the default font for the printer. It must be either a 10-pitch or 12-pitch, fixed-pitch font.

The font numbering system allows compatibility across different printers. For example, on one printer, font number two (F2) might be Elite. Another printer may not have an Elite font, but whichever font has been assigned number two (F2) will be used instead. The font numbers define the generic font names used by Word. They are:

0–15	Modern a–Modern p
16–31	Roman a–Roman p
32–39	Script a–Script h
40–47	Foreign a–Foreign h
48–55	Decor a–Decor h
56–63	Symbol a–Symbol h

Up to 64 fonts may be described in a PRD file. See "Font Assignment Table" at the end of this chapter for a list of the recommended correspondences between font numbers and font names. Fonts are numbered and described in the Font Description section in ascending, but not necessarily consecutive, order, for example, F0, F1, F4, F10.

CTP:*value* This flag "points" to a Character Translation Table and tells the printer to use it to interpret characters in the font. The value is the number of the Character Translation Table used for the font. More than one font may use the same Character Translation Table.

If you do not need to use a Character Translation Table, the flag should read: *CTP:NIL*

For more information, see "Character Translation Table," later in this chapter.

cPSDs:# Indicates the number (or "count") of available sizes for the font currently being described. For example, if the font "Courier" has three available sizes, the flag should read: *cPSDs:3*

Printer Sequence Description For each size available for a font, there is a Printer Sequence Description (PSD). The font sizes and their accompanying PSDs must be arranged in ascending order. The smallest size is described first, followed by the next largest, and so on. Each PSD has the following labels:

- **FontSize: #**
  Identifies the font size in half-points. The font size in points can be determined by dividing the number of characters per inch (pitch) into 120. For example, 10 (pitch) divided into 120 equals 12 (points). The font size for a standard 10-pitch font is 12 points. Since the measurement used in *FontSize* is in half points, the value required by the PRD file for a 12-point font is 24 (12 x 2).

  A table translating common pitch values to points is included in the introduction to Chapter 2, "Supported Printers."

- **Wtps:** *value1 value2 value3 value4*
  The *Wtps* label is followed by four values. They define the width of the font's normal characters as well as characters with bold and italic formats.
  The values are:

  value1 = Width of normal characters
  value2 = Width of italic characters
  value3 = Width of bold characters
  value4 = Width of bold-italic characters

  For fixed-pitch fonts, the *Wtps* values equal the characters' widths in units of *dxaMin* (see *dxaMin* in "The Header," earlier in this chapter). For proportional fonts, the values refer (or "point") to a Character Width Table (CWT) that defines individual character widths.
  You can calculate the *Wtps* value for fixed-pitch fonts using the following formula: 1440/CPI/*dxaMin* = *Wtps*.
  For example, if your printer manual states that a font prints at 17.16 cpi (characters per inch) in compressed mode, and the *dxaMin* value for your printer is 12, the equation would be 1440/17.16/12 = 7. Assuming all the italic and bold characters have the same width, the *Wtps* value would be:

  Wtps: 7 7 7 7

  For proportional fonts, *Wtps* can point to more than one Character Width Table. For example, *Wtps: W0 W0 W1 W1* means use Character Width Table 0 for normal and italic, but use Character Width Table 1 for bold and bold-italic.

- **beginmod:***modvalue "codes"*
  This label tells the printer how to begin printing in this font size. *Beginmod:* is followed immediately by a number, and the line is ended with a control code enclosed in quotation marks.
  For example, *mod:0 "^O"* means no special mod required, and the control code used to start this font size is CONTROL+O. When you print, Word sends the control code at the beginning of the text formatted in this font and size.
  The values for this flag are:

  mod = 0: Default — no special modification.

  mod = 1: Indicates you cannot make this font size bold. On certain dot matrix printers, compressed fonts cannot be bold.

  mod = 2: Use set character spacing command when changing to this font. This is necessary when the begin font control sequence does not automatically produce correct character spacing. This value is not necessary for most dot matrix printers or for proportionally spaced fonts.

  mod = 4: Set character spacing parameter is doubled by the printer (for Toshiba P1350 expanded fonts).

  mod = 5: Ignore control sequence in draft mode.

  Control code: Printer control escape sequence. Specifies the escape sequence that puts your printer into the mode required for this font and size. Enclose the escape sequence in quotation marks, as you would any standard control code sequence. This is described in "Entering Control Codes," earlier in this chapter.

- **endmod:***modvalue "code"*
  This is the code required to end this font size. Usually this code reverts the font to the default, 10-pitch font for the printer. The "modvalues" are the same as those for *beginmod* above.
- **beginItalicmod:***modvalue "code"*
  This code tells the printer to start printing text in a separate italic font. The modvalues recognized are the same as those for *beginmod* above.

  For most printers, specifying this code is not necessary. It is required only for those printers that create italic by using separate fonts initiated with their own control codes. If a printer has only one italic sequence for all fonts, leave *beginItalicmod* blank, and use the standard italic Printer Control Sequence Description (PCSD). See "Printer Control Sequence Description," later in this chapter.
- **endItalicmod:***modvalue "code"*
  This label ends the italic font initiated with *beginItalicmod*. It is necessary only if you used *beginItalicmod*. Usually the control code reverts the font to the default, 10-pitch font for the printer. The "modvalues" are the same as those for *beginmod* above.
- **beginBoldmod:***modvalue "code"*
  This label works just as *beginItalicmod* does. It tells the printer to start printing in a separate bold font. The modvalues recognized are the same as those for *beginmod*. The control code is the one which initiates the appropriate bold font.

  For most printers, specifying this code is not necessary. It is required only by those printers that create bold by using separate fonts.
- **endBoldmod:***modvalue "code"*
  This label ends the bold font initiated with *beginBoldmod*. It is necessary only if you used *beginBoldmod*. Usually the control code reverts the font to the default, 10-pitch font for the printer. The modvalues are the same as those for *beginmod* above.
- **beginItalBoldmod:***modvalue "code"*
  This label works just as *beginItalicmod* does. It tells the printer to start printing in separate bold-italic font. The modvalues recognized are the same as those for *beginmod* above. The control code is the one which initiates the appropriate bold-italic font.

  For most printers, specifying this code is unnecessary. It is required only for those printers that create bold-italic by using separate fonts.
- **endItalBoldmod:***modvalue "code"*
  This label ends the bold-italic font initiated with *beginItalBoldmod*. It is necessary only if you used *beginItalBoldmod*. Usually the control code reverts the font to the default, 10-pitch font for the printer. The "modvalues" are the same as those for *beginmod* above.
- **DLF:#**
  Download fonts flag. The # indicates which of the available font modes — normal, bold, italic, bold-italic — are available as downloadable fonts.

The values for this flag and their meanings are:

1 = normal
2 = italic
3 = normal, italic
4 = bold
5 = bold, normal
6 = bold, italic
7 = bold, italic, normal
8 = bold-italic
9 = bold-italic, normal
10 = bold-italic, italic
11 = bold-italic, italic, normal
12 = bold-italic, bold
13 = bold-italic, bold, normal
14 = bold-italic, bold, italic
15 = bold-italic, bold, italic, normal

For example, if normal is the only downloadable font mode available, the flag should read: *DLF:1*. If bold, italic, and normal are available, the flag should read: *DLF:7*.

LineSpacing: # The value is in points (1/72 inch). This is the value used for auto line spacing for this font size. This is the height of the character cell or boundary box.

More Font Sizes

For each additional font size, there is an additional PSD, until all the sizes for a font are defined.

FontName:*name* Immediately before the end of the Font Description section is the font name, such as Pica or Courier. This name appears in the "font name" field of the Format Character command.

}F This code identifies the end of the Font Description section for each font. If there is more than one font, the next font description would start immediately with another {*F#* code.

Character Width Table

```
{W0
FontSize:24 chFirst:32 chLast:126
  32:120  33:72   34:120  35:120  36:120  37:144  38:144  39:72
  40:96   41:96   42:120  43:120  44:72   45:120  46:72   47:120
  48:120  49:120  50:120  51:120  52:120  53:120  54:120  55:120
  56:120  57:120  58:72   59:72   60:120  61:120  62:120  63:120
  64:144  65:144  66:144  67:144  68:144  69:144  70:144  71:144
  72:144  73:96   74:120  75:144  76:144  77:168  78:144  79:144
  80:144  81:144  82:144  83:144  84:144  85:168  86:144  87:168
  88:144  89:144  90:120  91:96   92:120  93:96   94:120  95:120
  96:72   97:120  98:144  99:120  100:144 101:120 102:96  103:144
  104:132 105:96  106:108 107:120 108:96  109:144 110:132 111:120
  112:144 113:144 114:120 115:120 116:96  117:144 118:144 119:168
  120:120 121:144 122:120 123:96  124:72  125:96  126:120


}W
```

A Character Width Table

The Character Width Table describes the width of characters for a proportional font. A proportional font varies the spacing between characters, based on their width. For example, an uppercase "W" requires more space than a lowercase "i."

This section is required only for a proportional font, and should be ignored for standard fixed-width fonts.

If you add a Character Width Table, make sure that the proportional width font's *Wtps* flag in its Printer Sequence Description (PSD) points or refers to the new table.

{W#
This code marks the beginning of the Character Width Table section. The first Character Width Table described is numbered *W0*, the second *W1*, and so on.

FontSize:# chFirst:# chLast:# FontSize identifies the average font size in half-points. The value need not be the same as the corresponding *FontSize* value in the PSD section with a pointer to this table. If width table scaling is started (using the *Microspace* flag), Word obtains the data for any width by scaling the value in the table by the ratio of the two sizes. It is possible for multiple PSDs to point to the same width table.

The *chFirst* label identifies the first character whose width is defined in this table.

The *chLast* label identifies the last character whose width is defined.

The Character Width Table consists of the decimal ASCII value of each character, followed by a colon (:) and the width of the character in units of *dxaMin* (described in "The Header," earlier in this chapter).

}W This code marks the end of the Character Width Table.

Character Translation Table

```
{T0
cCSD:1 chFirst:128 chLast:175
  128: "C^H,"      129: "u^H        130: "e^H'"      131: "a^H^0136 "
  132: "a^H        133: "a^H`"      134: "a"         135: "c^H,"
  136: "e^H^0136 " 137: "e^H        138: "e^H`"      139: "i^H
  140: "i^H^0136 " 141: "i^H`"      142: "A^H`"      143: "A"
  144: "E^H'"      145: "a"         146: "A"         147: "o^H^0136 "
  148: "o^H        149: "o^H`"      150: "u^H^ 0136" 151: "u^H`"
  152: "y^H        153: "O^H        154: "U^H        155: "c^H/"
  156: "#"         157: "Y^H="      158: "P"         159: "f"
  160: "a^H'"      161: "i^H'"      162: "o^H'"      163: "u^H'"
  164: "n^H~"      165: "N^H~"      166: "a^H_"      167: "o^H_"
  168: "^0250 "    169: "^0251 "    170: "^0252 "    171: "^0253 "
  172: "^0254 "    173: "^0255 "    174: "<^H="      175: ">^H="
```

A Character Translation Table

A Character Translation Table (CTT) is used to create characters not normally found on your printer or keyboard, or to map printer characters to match screen symbols.

In the CTT, you define a string of characters (usually a control sequence) to print in place of the translated character. When Word encounters one of the translated characters, it prints the string of characters specified for that translated character.

You can use the CTT to create foreign characters, graphics characters, and math symbols. Some of the PRD files provided with Word use this feature to emulate the IBM extended character set. For example, to get a "greater than or equal to" symbol, you could define the extended ASCII character 242 to print a ">" and then an underline, with a backspace (^H) between them: *">^H_"*

You can use a CTT to map special characters from the printer's character set to the character set of your computer. In this way, the character you type on the screen will print on the printer. You can also use a CTT to substitute one character for another.

Note The Character Width Table for each font using a Character Translation Table must contain the correct widths for each character after it is translated.

{T#
This code marks the beginning of the Character Translation Table (CTT) section. The first Character Translation Table described is numbered T0, the second T1, and so on.

cCSD:# The # represents the number of CSDs (Character Sequence Descriptions). A CSD consists of two labels, *chFirst*, and *chLast*, which define the first and last characters of a CSD and consecutive numbers to be translated.

For the range of ASCII characters defined by *chFirst* and *chLast,* the CSD must have an entry for every character. The entry may be blank, but it must be included.

For that reason, it makes sense to use more than one CSD if there are large gaps in the sequence of characters to be translated.

For example, if you want to define characters 1 to 32 and 176 to 254, you could define all characters from 1 to 32 with one CSD, and all characters between 176 and 254 with another. If you used just one CSD, you would need to have entries for all the characters between 32 and 176 that you didn't wish to define.

The CSDs are made up of:

- **chFirst:# chLast:#**
  The *chFirst* label specifies the ASCII value of the first character defined, and the *chLast* label specifies the last character in a particular CSD. *ChFirst* and *chLast* figures must be supplied for each CSD.
- **The table itself**
  The table is a series of numbers starting with the number set as *chFirst* and ending with the number set as *chLast*. The format is:

  #: "string of characters" #: "string . . ." #: "string . . ."

  where # is the ASCII value of the character to be translated. Make sure you place the string of characters inside quotation marks.

  If you don't want to translate a particular character in the sequence, put that character by itself between quotation marks (for example "174").

  The syntax for two CSDs is as follows:

  cCSD:2
  chFirst: # chLast: #
  #: "string of characters" #: "string . . ."
  chFirst: # chLast: #
  #: "string of characters" #: "string . . ."

Enter characters above decimal 127 by holding down ALT and typing the decimal code for the character on the keypad. You also can use the hex or octal representations, as described in "Entering Control Codes," earlier in this chapter.

}T This code marks the end of the Character Translation Table.

Printer Control Sequence Description

```
{P
byte:0 mod:0 "^[@"
byte:4 mod:0
byte:8 mod:0 magic:0 value:127 "^[C"
byte:14 mod:0
byte:18 mod:1 magic:0 value:85 "^[J"
.
.
.
byte:224 mod:0
byte:228 mod:0
byte:232 mod:0
byte:236 mod:0
byte:240 mod:0
}P
```

A Printer Control Sequence Description section

This section describes the control codes or other methods used by the printer for producing formats such as bold, underline, subscript, and superscript. It also contains codes for initializing the printer, sheet feed control codes, and so on. Each code is referenced by its byte location.

{P This code marks the beginning of the Printer Control Sequence Description (PCSD) section.

Short PCSDs

Most printer control sequences are of the "short" variety described in this section. "Long" PCSDs have two additional fields that are described below.

byte:# mod:# *"code"* The byte value set with this label determines the byte's location in the binary PRD file. The byte value also determines the function it serves. Byte values and their functions are listed at the end of this section.

You can use the *mod:* number to supply additional information to Word on steps required to perform a particular function. It is usually set to 0 (*mod:0*), which indicates no modification. The mod values for specific PCSD bytes are listed in the "Description of PCSD Bytes" section later in this chapter. Many bytes do not have mod values.

A control code follows the *mod* number. This is a sequence of characters or codes that command the printer to perform a particular function. For information on how to enter control codes, see "Entering Control Codes," earlier in this chapter.

Long PCSDs

Long PCSDs are located at bytes 8, 18, 28, 82, 144, 154, 164, 174, 184 and 194. Long PCSDs differ from short printer control sequences in that they have two additional fields, *magic:* and *value:*.

magic:# Use this number as an offset if your printer requires a nonzero-based value to perform a specified function. If you specify a magic value, it will be added to the number before sending. Usually, the magic value is not required, so you should set it to 0.

If the printer cannot accept 0 as a value, you need to offset the values that Word computes by 1 to ensure that 0 is not set. A magic value of 1 ensures that 1 is added to the value that is sent to the printer.

value:# This number specifies the maximum value that can be used with certain control sequences. Use a value of 0 if the *magic:* and *value:* numbers do not apply (which is usually the case).

Descriptions of PCSD Bytes

The PCSD bytes are arranged as follows:

0–3 Resets printer, beginning of document.

4–7 Resets printer, end of document.

mod = 1: Suppresses form feed when canceling print.

8–13 Sets form length, first part. The parameter is expressed in units of lines, where there are normally six lines per inch.

If mod = 0 and no control sequence is specified, Word uses line feeds to get to the bottom of a page.

mod = 1: Uses form length set by printer switch. Word sends a form feed at the end of each page, even if no control sequence is specified.

mod = 2: (Qume hex format). A two-byte format, where the first byte represents the hex character of the tens, and the second byte is the ones.

mod = 3: (NEC7710). Count of newlines.

mod = 4: ASCII format. Parameter is output as a variable-length ASCII string (decimal).

14–17 Sets form length, second part. If you specify a control sequence, it will be output after the parameter.

18–23 Sets line spacing, first part. The parameter is expressed in units of *dyaMin* with the magic number added.

mod = 1: (EpsonMXG). Temporary line space. The parameter is converted to units of *dyaMin*∗3 (that is, *dyaMin* units are multiplied by 3). Note that this control sequence produces an immediate line feed of the specified amount and does not affect the spacing of line feeds.

mod = 2: Suppresses newline after carriage return.

mod = 3: Suppresses carriage return before newline.

mod = 4: ASCII format.

mod = 5: (Xerox 2700). Parameter is converted to units of *dyaMin*∗5.

mod = 7: Incremental line feed. Control sequence moves print head down by one unit of *dyaMin*. Repeated control sequences are output to achieve desired line spacing.

24–27 Sets line spacing, second part.

mod = 7: (Tandy printers). Uses control sequence instead of carriage return to move print head to leftmost printing position (for multipass printing of boldface, underline, strikethrough).

28–33 Sets character spacing, first part. The parameter is expressed in *dxaMin* units with the magic number added. Extra spaces are used if desired spacing is greater than maximum value. Note that the maximum value usually must be nonzero.

mod = 1: Relative movement command.

mod = 3: (Epson). Graphics mode is used to effect character spacing. Word outputs the first part of the control sequence, then two bytes indicating the number of graphics bytes to follow, then the graphics bytes themselves, which are zeros. The maximum value is not used.

mod = 4: ASCII format.

mod = 6: (Okidata). Graphics mode is used to effect character spacing. Similar to mod = 3, except the count of graphics bytes is not output, and the current font is restored after exiting graphics mode.

mod = 8: (Hewlett-Packard LaserJet). Relative movement command.

mod = 9: (Xerox 2700, DEC LN03). Relative movement command, parameter in ASCII.

mod = 10: (Epson LQ). Absolute positioning command.

mod = 11: (Brother). Uses set character spacing to set each space explicitly.

34–37 Sets character spacing, second part.

mod = 1: (Brother). Restores current font after changing character spacing.

38–41 Bin1 begin (for sheet feeder control). Output at the beginning of each page when the "paper feed" field of the Print Options command is set to Bin1.

mod = 8: Page select sequence is sent out at the top of each page.

42–45 Bin1 end. Output at end of page.

46–49 Bin2 begin.

mod = 8: Page select sequence is sent out at the top of each page.

50–53 Bin2 end.

54–57 Line begin. Output at the beginning of each line sent to the printer. May be used to set unidirectional print, for example.

58–61 Line end.

62–65 Text (other than control information) begin. Use for MSPRINT only.

66–69 Text end.

70–73 Bin3 begin.

mod = 8: Page select sequence is sent out at the top of each page.

74–77 Bin3 end.

78–81 Line draw correction escape sequence. Necessary for returning to the baseline after printing IBM extended character set characters. Most often this sequence uses a reverse and then a forward line feed to accomplish this.

82–87 Vertical text positioning, first part.

mod = 1: relative movement command.

mod = 2: sequence causes reverse line feed.

mod = 8: (HP LaserJet). Absolute movement command.

mod = 9: (Canon/DECLN03). ASCII format relative movement.

88–91 Vertical text positioning, second part.

92–95 Orientation begin.

mod = 8: (HP LaserJet). Landscape, send sequence after setting page length with legal size paper.

96–99 Orientation end.

100–103 Duplex begin.

104–107 Duplex end.

108–111 Envelope feed begin (Bin 4).

mod = 8: Page select sequence is sent out at the top of each page.

112–115 Envelope feed end.

116–119 Manual feed begin (bin 0).

mod = 8: Page select sequence is sent out at the top of each page.

120–123 Manual feed end.

124–127 Reserved.

128–131 Begin bold.

mod = 1: BS pass (double strike).

mod = 2: CR pass.

mod = 3: Print wheel change.

mod = 6: (C. Itoh F10). CR pass, shadow. Uses CR pass forward one unit of *dxaMin*, then back one unit.

mod = 7: (IBM Quietwriter). CR pass, shadow. Sends code sequence after CR.

132–135 End bold.

136–139 Begin italic.

mod = 3: Print wheel change.

mod = 4: Uses underline instead.

140–143 End italic.

144–149 Begin underline.

mod = 1: BS pass. Uses underscore characters.

mod = 2: CR pass.

mod = 3: (Epson). Graphics mode. Uses single-density graphics. Similar for strikethrough and double underline below.

mod = 4: Control sequence doesn't underline spaces, so don't use it for leading underscores or footnote begin lines.

mod = 6: CR pass with backspace correction.

mod = 7: (Epson). Double-density graphics mode.

150–153 End underline.

154–159 Begin strikethrough.

mod = 1: BS pass. Uses hyphens.

mod = 2: CR pass.

mod = 3: (Epson). Graphics mode.

mod = 6: CR pass with backspace correction.

mod = 7: (Epson). Double-density graphics mode.

160–163 End strikethrough.

164–169 Begin double underline.

mod = 1: BS pass. Uses underscore characters, unless control sequence is also specified.

mod = 2: CR pass.

mod = 3: (Epson). Graphics mode.

mod = 4: Uses underline.

mod = 6: CR pass with backspace correction.

mod = 7: (Epson). Double-density graphics mode.

170–173 End double underline.

174–179 Begin superscript.

mod = 2: CR pass. Uses set line spacing to do proper vertical positioning.

180–183 End superscript.

184–189 Begin subscript.

mod = 2: CR pass. Uses set line spacing.

190–193 End subscript.

194–199 Set scalable font, first part.

Currently, the only scalable fonts that Word supports are for PostScript printers. If you do not have a PostScript printer, this byte should read: *byte:194 mod:0 magic:0 value:0*

The magic number for this flag is the number which is the minimum half-point size of scalable fonts. *Magic* is also the increment used for font size. *Value* is the maximum half point size. Note that *magic* and *value* do not serve their normal purposes here.

For example, *byte:194 mod:0 magic:4 value:254* means a scalable font with sizes from 2 to 126, available in size increments of 2 (for example, font sizes 2, 4, 6, 8...126); 2 is the increment because the magic value is 4 half points (4 half points equals 2 points).

When using scalable fonts, the font size must be set to zero in the Font Description section, and it must have a Character Width Table, even if it's a fixed-pitch font.

The values in the Character Width Table for a scalable font must be set for a 50-point font, and the *Linespacing* flag in the Font Description section must be set to 50.

200 Set scalable font size, second part.

This sequence should always be " F " (note uppercase and the space before and after).

204 Begin unidirectional printing mode. This sequence is necessary for unidirectional mode graphics.

208 End unidirectional printing mode. This code should set the printer back to bi-directional mode. If the printer cannot print bi-directionally, leave this field blank.

212 Begin red text.

216 Begin green text.

220 Begin blue text. If a printer has two shades of blue, Word expects light blue (cyan) to be at byte 220.

224 Begin violet text. If a printer has two shades of blue, Word expects the darker blue to be at byte 224.

228 Begin magenta text.

232 Begin yellow text.

236 Begin white text (PostScript only).

240 End color (return to black).

}**P** This code marks the end of the Printer Control Sequence Description section.

Some PRD files may have additional modification values that are specific to that printer.

Graphics Device Description

```
{D1
DevInfo:25154
Procedures:0
DimPageH:14400
DimPageV:11520
PixPageH:1800
PixPageV:1440
DimPenH:20
DimPenV:20
Pens:1
ColorPlanes:1
cAvailColors:C0
cPrefColors:C0
aLineStyles:A0
aFillPatterns:A2
sDevName:S3
RasterInfo:1
Bits:24
ParmType:2
Twice:0
Shift:0
Mask:0
Add:0
PixHeightNumer:24
PixHeightDenom:1
PixInterlaceNumer:0
PixInterlaceDenom:1
aRotFillPatterns:A2
sBeginGraphics1:S4
sBeginGraphics2:S2
sRedCyan:S2
sGreenMagenta:S2
sBlueYellow:S2
sBlack:S2
sEndColor:S2
sEndGraphics:S2
sSetup:S2
}D
```

A Graphics Device Description

This section of the PRD file describes the printer's graphics printing capabilities. If the printer does not print graphics, this section is not included.

Modifying this section requires a high degree of technical knowledge.

Word classifies a printer as either a raster device, a vector device, or a raster/vector device:

- Raster devices take input in the form of a formatted bit map. Dot matrix printers and Hewlett-Packard LaserJet and compatible printers are raster devices.
- Vector devices support mathematical routines for drawing lines and arbitrary positioning of the drawing head (or pen). If one color, or object, is drawn where another color, or object has previously been drawn, they are mixed; the new object or color does not replace the old one. A plotter is a typical vector device.

- Raster/vector devices are similar to vector devices in that they support line drawing and arbitrary positioning of the drawing head. However, they differ from vector devices in the way they replace objects that they draw on top of. For example, when colors are drawn on top of another object, the colors of the objects do not mix. Instead, the color of the new object completely replaces colors already at the place where the new object is drawn. PostScript printers are the only raster/vector devices Word currently supports.

Although Word recognizes three graphics device types, a PRD file may include up to 16 graphics device descriptions. A specific device such as a raster printer requires a separate description for each graphic resolution supported. For example, if a laser printer can print at three resolutions, 75, 150, and 300 dpi, it requires three separate device descriptions. Separate device descriptions are not required for color and black and white. Word internally converts color device descriptions to black and white if a monochrome model is selected.

Each device description contains information about the device type, along with information on color, drawing capabilities and printer resolution.

{D# This code begins the Graphics Device Description section. The number (#) is the number of the device described in this block. The first device is D0, the second D1, the third D2, and so on. A model can support more than one graphic device just as it can support more than one resolution.

DevInfo: # This is a 2-byte flag (16 bits, bit 0 through 15). It contains information that describes the printing device you are using. The flag represents the sum of the set bits.

Word ignores bits 3–6 and 9–13. They are used by Microsoft Works.

Bit Descriptions for DevInfo:

bit 0: Vector device. Set this bit if you have a vector device.

bit 1: Raster device. Set this bit if you have a raster device.

bit 2: Raster/Vector device. Set this bit if you have a raster/vector device.

bit 3: Use device fonts. Set this bit only if you have a vector or a raster/vector device and you want to be able to use the built-in fonts along with the bit-mapped fonts generated by an application as part of a graphic.

bits 4–5: Rotate device fonts. These bits apply only if bit 3 is set.

00 = Cannot rotate (neither bit 4 nor 5 is set)

01 = Can rotate to 90 degrees only (bit 4 is set)

10 = Can rotate to a multiple of 90 degrees (bit 5 is set)

11 = Can rotate to any angle (bits 4 and 5 are set)

Set the bits as listed above to match your printer's ability to rotate fonts. This is necessary only if you have a vector device or a raster/vector device.

bit 6: Use raster fonts. This bit is set if raster graphic fonts are to be used while in graphics mode.

bit 7: Uses a ribbon for colors.

bit 8 Reserved for future use. (Zero).

bit 9: Do not prompt for pen changes. If this bit is set, Word will not prompt you to change the pen. Pen changes are primarily useful for plotters.

bit 10: Film device. Set this bit if you are using a film device.

bit 11: Slow pen capability. This should be set only for plotters that can slow down the pen selecting speed.

bit 12: Variable pen size. This is 0 for raster devices.

bit 13: Variable page size. If the bit is set, your printer can print on various page sizes. Otherwise, it is limited to 8 x 10 inches.

bit 14: Vertical drawing capability. This is set if the virtual print head orientation (bit 0 or *fRaster*) is different in landscape mode than in portrait mode. If this flag is set, Word does not have to rotate bitmaps differently for portrait and landscape fonts.

bit 15: Always set to 0.

Procedures: # This flag should always be set to 0 (zero) for raster devices. In order to define procedures for any printer other than a raster device, you need a PRD developers kit available from Microsoft.

Page Parameters

The following four flags define page parameters for graphics printing. These parameters define a page in landscape orientation. That is, the horizontal width is always greater than the vertical height.

DimPageH: # The horizontal dimension, or width, of the printed page. The number is in twips. For example, if a page is 11 inches wide (landscape orientation), you would multiply 1440 (1 inch = 1440 twips) by 11, so that the flag would read: *DimPageH:15840*

DimPageV: # The vertical dimension, or length, of the printed page. The number is in twips. For example, if a page is 8 inches long (landscape orientation), you would multiply 1440 (1 inch = 1440 twips) by 8, so that the flag would read: *DimPageV:11520*

PixPageH: # The number of horizontal pixels per page. This number is the product of the number of dots per inch and the horizontal width of the page in inches. For example, if the page is 11 inches wide (landscape orientation), and the resolution is 75 dpi, the flag should read: *PixPageH:825*

PixPageV: # The number of vertical pixels per page. This number is the product of the number of dots per inch and the vertical height of the page in inches. For example, if the page is 8 inches long (landscape orientation), and the resolution is 75 dpi, the flag should read: *PixPageV:600*

DimPenH: # Horizontal size of the pen in twips. For raster devices without pens, the value should be the multiple of the size of a pixel closest to 20 x 20 twips.

DimPenV: # Vertical size of the pen in twips. For raster devices without pens, the value should be the multiple of the size of a pixel closest to 20 x 20 twips.

Pens: # Number of pens the device holds. For raster devices, this number is always 1.

ColorPlanes: # Number of primary colors (not counting black) or ribbons. This number should be 3 for color printers and 1 for monochrome printers.

cAvailColors:C# The pointer to the colors string set that lists the colors available for the device. The set begins with "{C#" where # is the number of the string. The first colors string set is C0, the second C1, and so on. The first color must be black.

cPrefColors:C# The pointer to the colors string set that lists the preferred or default colors. For black and white printers, the list must contain only one color, black. Word draws HP-GL and Lotus PIC files with these colors. The set begins with "{C#" where # is the number of the string. The first colors string set is C0, the second C1, and so on.

aLineStyles:A# The pointer to the string set which contains the line styles available for this device. The set begins with "{A#" where # is the number of the string. The first "A" string set is A0, the second A1, and so on.

aFillPatterns:A# The pointer to the string set which contains the fill patterns available for this device. The set begins with "{A#" where # is the number of the string. The first "A" string set is A0, the second A1, and so on.

sDevName:S# The pointer to the text that names the resolution of this device. This text appears in the "resolution" field of the Print Options command in Word when you press F1. The set begins with "{S#" where # is the number of the string. The first "S" string set is S0, the second S1, and so on.

RasterInfo: # This is a two-byte field that describes a raster device. The flag value is the decimal sum of the set bits.

bit 0: Set this bit if the logical print head is oriented perpendicular to the print head's motion across the page.

bit 1: Least Significant Bit is on top.

bit 2: Device is color.

bit 3: Set this bit if color passes should be sent in the order yellow, magenta, cyan; otherwise they will be sent in the reverse order.

bit 4: Negate data bits. If you set this bit for a color printer, the bit indicates the printer has red, green, and blue ribbons instead of cyan, magenta, and yellow.

bit 5: Reserved.

bit 6: Construct 4 bytes from 3.

bit 7: Reserved.

bit 9: Left margin is graphic zeros. Word does not use this bit.

bit 10: Send Prefix once per line.

bit 11: Ribbon has a black color band. This means that the printer actually has the color black on the ribbon, as opposed to having to create the color black by combining colors.

bit 12: Reserved.

bit 13: Device uses Diablo conventions.
bit 14: Device does line feed.
bit 15: Printhead orientation.

Bits: # The bit width of the transmission of graphics data.

ParmType: # Parameter type for graphics data. The values for this flag are:

0 = Don't send parameters.
1 = Send high byte/low byte.
2 = Send low byte/high byte.
3 = Send exactly 3 ASCII digits.
4 = Send a single byte.
5 = Send exactly 4 ASCII digits.
6 = Special Method for the 3852 printer.
7 = Send ASCII, no leading zero.

Twice: # If there is a byte that needs to be sent twice in order for it to come out once in graphics mode, this should be specified here. Otherwise, set this field to 0. For example, if it takes two line feeds to make the printer do one line feed, you would put the ASCII representation of a line feed here: *Twice:^J*

Shift: # Number of bits to shift all graphic data.

Mask: # The number to mask all graphic data by. This parameter is subject to an OR check with all the data. It is used to set bits which must be set for every character sent. For example, some printers require that bit 7 be set for all data. This would require masking all bytes with the number 64.

Add: # Add this number to all raster data.

Interlacing

Interlacing is a printing technique used to achieve higher resolution and improve print quality. Interlacing prints a vertical line of graphics data, then returns and prints another line a fraction of a dot lower then the previous pass. Interlacing can be used only when bit 0 of *RasterInfo* is set. It should not be used in a color device description.

PixHeightNumer and *PixHeightDenom* together represent a fraction whose value should be: bits - InterlacePassHeight, where

InterlacePassHeight = *PixInterlaceNumer*/*PixInterlaceDenom*.

PixInterlaceNumer and *PixInterlaceDenom* represent the fraction of a pixel to move down to print the interlacing pass.

- **PixHeightNumer: #** Numerator of line feed height for graphics line (pixels).
- **PixHeightDenom: #** Denominator of line feed height for graphics line (pixels).

- **PixInterlaceNumer: #** Numerator of line feed height for an interlace pass (pixels).
- **PixInterlaceDenom: #** Denominator of line feed height for an interlace pass (pixels).

aRotFillPatterns: # The pointer to the string set which contains the list of rotated area patterns available for this device.

sBeginGraphics1: S# The pointer to the string containing the control sequence to put the printer in graphics mode. This string should not initialize the device because it is used to start graphics mode in the middle of a page of mixed text and graphics. The control sequence also sets the resolution of the device.

The string begins with "{S#" where # is the number of the string. The first "S" string set is S0, the second S1, and so on.

sBeginGraphics2:S# The pointer to the second part of the first *BeginGraphics* sequence. If a second part is not needed, the pointer should point to a NUL string. It is important to note that after this string is sent, the line spacing should be the height of a graphics line feed and the printhead should be at the far left of the first graphics line to be printed.

The string begins with "{S#" where # is the number of the string. The first "S" string set is S0, the second S1, and so on.

sRedCyan:S# The pointer to the string that contains a control sequence to start the color Red (for RBG devices) or Cyan (for CMY devices). RGB devices make colors using red, green, and blue. CMY devices make colors with cyan, magenta, and yellow. The sequence is sent before the raster graphics information.

The string begins with "{S#" where # is the number of the string. The first "S" string set is S0, the second S1, and so on.

sGreenMagenta:S# The pointer to the string containing a control sequence to start the color Green or Magenta. This sequence is sent before the raster graphics information.

The string begins with "{S#" where # is the number of the string. The first "S" string set is S0, the second S1, and so on.

sBlueYellow:S# The pointer to the string containing a control sequence to start the color Blue or Yellow. This sequence is sent before the raster graphics information.

The string begins with "{S#" where # is the number of the string. The first "S" string set is S0, the second S1, and so on.

sBlack:S# The pointer to the string containing a control sequence to start the color Black. This sequence is sent before the raster graphics information.

The string begins with "{S#" where # is the number of the string. The first "S" string set is S0, the second S1, and so on.

sEndColor:S# The pointer to the string that should be sent at the end of each line of raster graphics information. The string will indicate the end of the line. Bit 14 of the *RasterInfo* flag tells whether to send a line feed.

The string begins with "{S#" where # is the number of the string. The first "S" string set is S0, the second S1, and so on.

sEndGraphics:S# The pointer to the control sequence for ending raster graphics mode. This string should not re-initialize the device or send a form feed. Word does not send this string; Microsoft Works does.

The string begins with "{S#" where # is the number of the string. The first "S" string set is S0, the second S1, and so on.

sSetup:S# The pointer to a control sequence that should be sent at the start of a graphic. Word uses this sequence for laser printers only.

}D This code marks the end of the Graphics Device Description section.

Strings

```
{S0
"60 dpi"
}S
{S1
"^[* "
}S
{S2
" "
}S
{S3
"180 dpi"
}S
{S4
"^[*""
}S
{C0
0x0000
}C
{A0
0 1 2 3 4 5
}A
{A1
0 1 2 3 4 5 28 6 29
30 10 11 12 13 14 15
}A
{A2
0 1 37 38 39 5 35 36
29 30 34 11 12 13 14 15
}A
E
```

A sample series of strings

Strings are listed immediately after the last graphics device description.

The strings are pointed to from the graphics device descriptions. A string begins with the string name, composed of a letter and a number. Strings are numbered sequentially by letter. For example, the first string that begins with the letter "S" is named S0, the second is named S1, and so on. The first string that begins with the letter "A" is also numbered A0; the second is A1, and so on.

The following are some examples of strings and their values.

Below is an example of a text string that identifies the resolution:

```
{S0
"60 dpi"
}S
```

Below is an example of a string that is sent before each line of graphics data:

```
{S1
"^[* "
}S
```

Below is an example of a NUL string:

```
{S2
" "
}S
```

Below is an example of a string which is sent before raster graphics information for printing either Red (for RGB devices) or Cyan (for CMY devices):

```
{S3
"^[r^B"
}S
```

Below is an example of a string that is sent before raster graphics information for printing either Green or Magenta:

```
{S4
"^[r^A"
}S
```

Below is an example of a string that is sent before raster graphics information for printing either Blue or Yellow:

```
{S5
"^[r^D"
}S
```

Below is an example of a string that is sent before raster graphics information for printing Black. This string is used only if bit 11 of *RasterInfo* is set:

```
{S6
"^[r^@"
}S
```

The string below is an example of a list of available colors:

```
{C0
0x0000 0x001f 0x03e0 0x03ff 0x7c00 0x7c1f 0x7fe0 0x7fff
}C
```

Word uses a Red-Green-Blue color system to produce colors. For example, Magenta is 100% Red, 0% Green and 100% Blue. Each color is a 16-bit word, with the low five bits setting the amount of blue, the next five bits the amount of Green, and the next five bits the amount of red. The most significant bit is not used. Thus, the RGB value of red is 0x7C00 (hex); blue is 0x001F, and magenta is 0x7C1F. The color strings control the colors only for graphics data. They do not control the text data.

The example below contains information on line styles arrays which are built into the application:

```
{A0
0 1 2 3 4
}A
```

The following line styles are available:

0	Clear
1	Solid
2	Dashed
3	Dotted
4	Dot-Dashed

The styles must be specified in ascending order.

This example lists the area patterns available for this device:

```
{A1
0 1 2 3 4 5 28 6 29
30 10 11 12 13 14 15
}A
```

Area fill pattern list The first index must be 0 (clear) to allow outlining of areas. The order is the default order in which patterns are assigned to entries in data series (after skipping "clear"). No more than 16 styles are supported.

The area patterns are listed below:

Regular patterns:

0	Clear
1	Solid
2	Dense
3	Medium
4	Sparse
5	White
6	|| (vertical lines)
7	= = (horizontal lines)
8	(left diagonals)
9	// (right diagonals)
10	+ + (square hatching)
11	XX (diagonal hatching)
12	Dark //
13	Light //
14	Dark\
15	Light\

Patterns for raster devices with high horizontal resolution and low vertical resolution:

16 Dense
17 Medium
18 Sparse
19 \
20 //
21 XX
22 Dark //
23 Light //
24 Dark \
25 Light \

Looser patterns for raster devices with regular horizontal resolution and high vertical resolution:

26 ||
27 ||
28 = =
29 \
30 //
31 Dense
32 Medium
33 Sparse
34 + +

Looser patterns for raster devices with high horizontal resolution and high vertical resolution:

35 = =
36 ||
37 Dense
38 Medium
39 Sparse

E "E" ends the PRD file.

Sample PRD Text File

```
MAKEPRD 2.00
dxaMin:12 dyaMin:24 PrinterType:1
Microspace:0 SpecialFlags:0 SerialInterface:40960
WidthTSwap:1
{M
cPMDs:1
InhibitCTT:0 InhibitRevLF:1
LinedrawAutoMap:0 LinedrawNoShade:0
```

```
LinedrawFlag:3 LinedrawFont:0 LinedrawAdjust:0
ColorMod:0 ColorFlags:0 DuplexFlag:0 OrientationFlag:0
AutoSkipTop:0 UnprintableTop:0
AutoSkipLeft:0 UnprintableLeft:0
UnprintableBottom:0 UnprintableRight:0
DownloadFlag:0
GraphicsNotSupported:NIL
FontsNotSupported:NIL
BinsSupported:0
IniFile:NIL
ModelName:Dot Matrix
}M
{F0
CTP:T0
cPSDs:2

FontSize:16
Wtps:7 7 7 7
beginmod:1 "^O"
endmod:0 "^R"
beginItalicmod:0
endItalicmod:0
beginBoldmod:0
endBoldmod:0
beginItalBoldmod:0
endItalBoldmod:0
DLF:0
LineSpacing:10
FontSize:32
Wtps:24 24 24 24
beginmod:0 "^N"
endmod:0 "^T"
beginItalicmod:0
endItalicmod:0
beginBoldmod:0
endBoldmod:0
beginItalBoldmod:0
endItalBoldmod:0
DLF:0
LineSpacing:14

FontName:Pica
}F
{F1
CTP:T0
cPSDs:1
FontSize:32
Wtps:W0 W0 W0 W0
beginmod:0 "^N^[G"
endmod:0 "^[H^T"
beginItalicmod:0
endItalicmod:0
beginBoldmod:0
endBoldmod:0
beginItalBoldmod:0
endItalBoldmod:0
```

```
DLF:0
LineSpacing:14

FontName:Helvetica
}F
{W0 FontSize:24 chFirst:32 chLast:126
 32:120  33:72  34:120  35:120  36:120  37:144  38:144 39:72
 40:96  41:96  42:120  43:120  44:72  45:120  46:72  47:120
 48:120  49:120  50:120  51:120  52:120  53:120  54:120 55:120
 56:120  57:120  58:72  59:72  60:120  61:120  62:120 63:120
 64:144  65:144  66:144  67:144  68:144  69:144  70:144 71:144
 72:144  73:96  74:120  75:144  76:144  77:168  78:144 79:144
 80:144  81:144  82:144  83:144  84:144  85:168  86:144 87:168
 88:144  89:144  90:120  91:96  92:120  93:96  94:120 95:120
 96:72  97:120  98:144  99:120  100:144  101:120  102:96 103:144
 104:144  105:72  106:96  107:144  108:72  109:168  110:144 111:120
 112:144  113:144  114:120  115:120  116:96  117:144 118:144  119:168
 120:120  121:144  122:120  123:96  124:72  125:96  126:120
}W
{T0
cCSD:1 chFirst:128 chLast:175
  128: "C^H,"        129: "u^H          130: "e^H'"        131: "a^H^0136 "
  132: "a^H          133: "a^H`"        134: "a"           135: "c^H,"
  136: "e^H^0136 "   137: "e^H          138: "e^H`"        139: "i^H
  140: "i^H^0136 "   141: "i^H`"        142: "A^H`"        143: "A"
  144: "E^H'"        145: "a"           146: "A"           147: "o^H^0136 "
  148: "o^H          149: "o^H`"        150: "u^H^ 0136"   151: "u^H`"
  152: "y^H          153: "O^H          154: "U^H          155: "c^H/"
  156: "#"           157: "Y^H="        158: "P"           159: "f"
  160: "a^H'"        161: "i^H'"        162: "o^H'"        163: "u^H'"
  164: "n^H~"        165: "N^H~"        166: "a^H_"        167: "o^H_"
  168: "^0250 "      169: "^0251 "      170: "^0252 "      171: "^0253 "
  172: "^0254 "      173: "^0255 "      174: "<^H="        175: ">^H="


}T
{P
byte:0 mod:0 "^[@"
byte:4 mod:0
byte:8 mod:0 magic:0 value:127 "^[C"
byte:14 mod:0
byte:18 mod:1 magic:0 value:85 "^[J"
byte:24 mod:0
byte:28 mod:10 magic:0 value:0 "^[$"
byte:34 mod:0
byte:38 mod:0
byte:42 mod:0
byte:46 mod:0
byte:50 mod:0
byte:54 mod:0
byte:58 mod:0
byte:62 mod:0
byte:66 mod:0
byte:70 mod:0
byte:74 mod:0
byte:78 mod:0
byte:82 mod:0 magic:0 value:0
```

```
byte:88 mod:0
byte:92 mod:0
byte:96 mod:0
byte:100 mod:0
byte:104 mod:0
byte:108 mod:0
byte:112 mod:0
byte:116 mod:0
byte:120 mod:0
byte:128 mod:0 "^[E"
byte:132 mod:0 "^[F"
byte:136 mod:0 "^[4"
byte:140 mod:0 "^[5"
byte:144 mod:7 magic:0 value:0 "^[L"
byte:150 mod:0
byte:154 mod:6 magic:0 value:0
byte:160 mod:0
byte:164 mod:7 magic:0 value:0 "^[L"
byte:170 mod:0
byte:174 mod:0 magic:0 value:0 "^[S0"
byte:180 mod:0 "^[T"
byte:184 mod:0 magic:0 value:0 "^[S1"
byte:190 mod:0 "^[T"
byte:194 mod:0 magic:0 value:0
byte:200 mod:0
byte:204 mod:0 "^[U^A"
byte:208 mod:0 "^[U^@"
byte:212 mod:0
byte:216 mod:0
byte:220 mod:0
byte:224 mod:0
byte:228 mod:0
byte:232 mod:0
byte:236 mod:0
byte:240 mod:0
}P
{D0
DevInfo:25154
Procedures:0
DimPageH:14400
DimPageV:11520
PixPageH:1800
PixPageV:1440
DimPenH:20
DimPenV:20
Pens:1
ColorPlanes:1
cAvailColors:C0
cPrefColors:C0
aLineStyles:A0
aFillPatterns:A2
sDevName:S3
RasterInfo:1
Bits:24
ParmType:2
```

```
Twice:0
Shift:0
Mask:0
Add:0
PixHeightNumer:24
PixHeightDenom:1
PixInterlaceNumer:0
PixInterlaceDenom:1
aRotFillPatterns:A2
sBeginGraphics1:S4
sBeginGraphics2:S2
sRedCyan:S2
sGreenMagenta:S2
sBlueYellow:S2
sBlack:S2
sEndColor:S2
sEndGraphics:S2
sSetup:S2
}D
{S0
"60 dpi"
}S
{S1
"^[* "
}S
{S2
" "
}S
{S3
"180 dpi"
}S
{S4
"^[*'"
}S
{C0
0x0000
}C
{A0
0 1 2 3 4 5
}A
{A1
0 1 2 3 4 5 28 6 29
30 10 11 12 13 14 15
}A
{A2
0 1 37 38 39 5 35 36
29 30 34 11 12 13 14 15
}A
E
```

Common PRD File Modifications

This section describes general procedures for common PRD file modifications. Refer to the "Text File Format" section earlier in this chapter for detailed descriptions of the flags and PRD file sections referred to in these procedures.

To allow a PRD file to accept downloadable fonts

If your printer can accept downloadable fonts but does not have a PRD file that supports downloading, you can modify its PRD file to allow it to support downloading. The listing for your printer in Chapter 2, "Supported Printers," indicates whether a PRD file supports downloading.

Modifying a PRD file to allow it to work with a downloadable font is a matter of including the font's size and width in the PRD file. With that information, Word can produce the correct line spacing and margins when it prints with that font.

Here are the PRD file modifications you need to make:

- Create a font description for each downloadable font in the Font Description section of the PRD file.

  A font description begins with the {*F* code, includes all the Font Description flags and ends with the }*F* code. Each font size has its own Printer Sequence Description.
- If the downloadable font is proportional, you must create a Character Width Table for it.

Note You might be tempted to change the PRD file's *DownloadFlag* flag to indicate that downloadable fonts are available. However, the *DownloadFlag* signals Word to use its downloading program which requires a DAT file for the fonts that it downloads. Unless the fonts you are downloading are supported in a DAT file, you can't use Word's internal downloading program. You can create a DAT file, following the DAT file format specification described in Appendix C. But you may find it easier to use the downloading utility that comes with the downloadable fonts.

How to remap characters

If you type certain special characters such as bullets or foreign characters frequently, you can use a PRD file's Character Translation Table (CTT) to swap ASCII locations with an infrequently used symbol on your keyboard.

For example, if you want easy access to the ë character, you could switch it with a symbol you don't often use, such as *. You would then type * to print an ë character. If you wanted to type a *, you would type the ASCII code formerly assigned to ë. Nothing would change on screen — typing * on the keyboard would still produce * on your video monitor, but an ë would be substituted when your document printed.

The section on Character Translation Tables earlier in this chapter describes the CTT format. The procedure below for mapping an em dash provides a detailed example of how to remap. (Note: This procedure is also a special case, since Word internally maps ALT+CTRL+- (hyphen) to ASCII 196. You can't use a CTT to map ALT, CTRL, or the function keys).

To map an em dash to ALT+CTRL+- (hyphen)

If your printer can print an em dash, you can press ALT+CTRL+- (hyphen) to produce an em dash. Check your printer manual to see which ASCII number corresponds to the em dash in your printer's character set. If the em dash is assigned to ASCII 196, you do not need to modify your PRD file. Otherwise you need to map the em dash to ASCII 196 to use the ALT+CTRL+- combination.

First use MakePRD to convert your printer's PRD file into a text file (see "Running MakePRD," earlier in this chapter).

If the fonts in which you want to print the em dash use a CTT, you may need to expand the existing CTT to include ASCII 196. Otherwise, you can create a CTT just for ASCII 196.

You can determine whether a font uses a CTT by looking at the *CTP* flag in the Font Description section to see whether it points to a CTT.

- To add an ASCII 196 entry to an existing CTT, you may need to modify the *cCSD* label to include an additional Character Sequence Description. The sequence description itself would read:

```
chFirst:196 chLast:196
 196: "0d### "
```

  where "###" is the decimal ASCII number of the em dash.

  For example, if your printer uses ASCII number 207 to print an em dash, the entry in the CTT would be:

```
196:"0d207"
```

- To create a new CTT, type:

```
{T0
cCSD:1 chFirst:196 chLast:196
 196: "0d### "
}T
```

  where "###" is the decimal ASCII number of the em dash.

  If you create a new CTT, you also need to modify the *CTP* flag in the Font Description for the fonts with which you want to use an em dash. The *CTP* should point to the new table, T0, in the example above.

Note If the PRD file you are modifying supports more than one model, check the *InhibitCTT* flag in the Model Block section of the PRD file. Change the flag's setting if it prevents the model from using a CTT.

To allow an IBM Wheel Printer to print single-spaced

Older models of the IBM Wheel Printer have a different minimum vertical print head movement than do the newer models. Because the PRD file for the Wheel Printer supports the newer models, line spacing on older models can be inaccurate. If you change your margins, the printer will print double-spaced.

If you have this problem, modify the first line in the Header section of the PRD file. The line that reads:

dxaMin:12 dyaMin:20

should be changed to read:

dxaMin:12 dyaMin:30

That is, you just need to change the *dyaMin* value from 20 to 30.

Font Assignment Table

These are the recommended font number assignments for the Font Description section of the PRD file.

The font number determines the generic font name, which appears when you press F1 in the "font name" field of the Format Character command.

For example, if you want to add Garamond to a PRD file, you should make it font 28. The font description would start with the code {*F28*. See the Font Description section earlier in this chapter for more information.

Font number	Generic font name	Reserved for
0	Modern a	Pica/Courier/Titan
1	Modern b	Courier/Pica-D
2	Modern c	Elite
3	Modern d	Prestige/Elite-D
4	Modern e	Lettergothic/Gothic/NLQ
5	Modern f	Gothic-PS/NLQ-D
6	Modern g	Cubic-PS

(continued)

Font number	Generic font name	Reserved for
7	Modern h	Lineprinter
8	Modern i	Helvetica*
9	Modern j	Avant Garde*
10	Modern k	Spartan*
11	Modern l	Metro*
12	Modern m	Presentation
13	Modern n	APL
14	Modern o	OCR-A
15	Modern p	OCR-B
16	Roman a	Printer's Standard Roman
17	Roman b	Emperor-PS/Trend-PS/Modern-PS
18	Roman c	Madeleine/Karena
19	Roman d	Zapf Humanist
20	Roman e	Classic
21	Roman f	optional, serif font
22	Roman g	optional, serif font
23	Roman h	optional, serif font
24	Roman i	Times Roman*
25	Roman j	Century*
26	Roman k	Palatino*
27	Roman l	Souvenir*
28	Roman m	Garamond*
29	Roman n	Caledonia*
30	Roman o	Bodoni*
31	Roman p	University
32	Script a	Script
33	Script b	Script-PS
34	Script c	optional, serif cursive font
35	Script d	optional, serif cursive font
36	Script e	Commercial Script*
37	Script f	Park Avenue*
38	Script g	Coronet
39	Script h	optional, serif cursive font
40	Foreign a	Greek
41	Foreign b	Kana
42	Foreign c	Hebrew
43	Foreign d	optional
44	Foreign e	Russian
45	Foreign f	optional
46	Foreign g	optional
47	Foreign h	optional
48	Decor a	Narrator/Orator
49	Decor b	Emphasis
50	Decor c	Zapf Chancery

(continued)

*Use of these fonts may be conditional upon a license grant from the owners of the fonts. Microsoft makes no representation as to the quality or performance of the fonts, and references to the fonts do not grant any license or right to use the fonts.

Font number	Generic font name	Reserved for
51	Decor d	optional decorative font
52	Decor e	Old English/Old World
53	Decor f	optional decorative font
54	Decor g	optional decorative font
55	Decor h	Cooper Black
56	Symbol a	Symbol/Pi
57	Symbol b	Linedraw/Forms
58	Symbol c	Math 7
59	Symbol d	Math 8
60	Symbol e	Bar 3 of 9
61	Symbol f	EAN/UPC
62	Symbol g	PCline
63	Symbol h	optional symbol font

MakePRD Questions

- *How can I tell if a printer is parallel or serial by looking at the printer driver file?*

  You can't. Most printer driver files have a serial interface listed even though they are used with parallel printers. A serial interface number (40960 or 49152) is included because someone might want to use that printer as a serial printer. If the printer is being used as a parallel printer (LPT1: is selected in the "setup" field of the Print Options command), Word ignores the value in the SerialInterface flag.

- *What does* FontSize *mean in the width table?*

  FontSize is half-point (1/144 inch) units. This need not be the same as the value in the *FontSize* flag in a Printer Sequence Description (PSD) that points to this table (using the *Wtps* flag). The data for any width may be obtained by scaling the amount in the table by the ratio of the two sizes. In this way, multiple PSDs may point to the same width table.

- *How do I enter a caret ^ into the character translation table? Won't Word interpret it as a control code?*

  Insert it as a decimal number. For example, if you want the letter e with a ^ (caret) over it, type *"e^H^0d94"* in the character translation table.

- *What is meant by a "CR pass with backspace correction"?*

  This printer mode uses a carriage return pass for the underline, then uses microspacing and backspacing for adjustment so the underline starts and stops as close as possible to the start and end of the text being underlined. It affects how the print head on the printer moves.

- *Why am I getting the message "encounter too long a string" when converting back to a binary PRD file?*

  This means that you left a quotation mark off of one of the control codes. For example if the code had "^[P with no quotation mark at the end, this is interpreted as an infinite string and MakePRD responds with the message *"encounter too long a string."*

- *When running MakePRD, why do I get the message "text file wrong format"?*

  There are two possible reasons.

  After modifying a PRD text file, you may not have saved the file as "Text-only." MakePRD can't use files in Word format; they must be ASCII text. Reload the file, choose the Transfer Save command, and select Text-only in the "format" field.

  The message would also appear if you left a blank line above the MakePRD statement.

Appendix A
Printing Special Characters

Sometimes the special characters you see on your screen do not appear, or appear as different characters, when you print your document. This appendix explains how Word prints special characters.

If you want help on printing specific special characters, such as a bullet or a foreign character, see the "Tips" section in Chapter 3, "Tips and Troubleshooting."

The Extended Character Set

The characters you see on the screen are part of what is known as the IBM extended character set (ECS). The IBM ECS contains 256 characters in all, and the letters, numbers, punctuation marks, and symbols that appear on your keyboard keys make up only about half of them. The other characters are special characters — symbols and foreign characters. The IBM ECS also includes the graphics characters that the line draw feature and the Format Border command use to draw lines and boxes. A line or box created with these features is actually just a series of graphics characters.

Appendix A, "The Extended Character Set," in the *Reference to Microsoft Word* lists all the characters in the IBM ECS, including the graphics characters.

The ASCII Code

Each character in the IBM ECS has a code number ranging from 0 to 255 assigned to it. This set of numbers, known as the ASCII code, are important because they are what the computer actually sends to the printer when you choose the Print command. For example, an uppercase "A" is sent to the printer as ASCII code number 65. The printer understands that the ASCII code number 65 represents an "A" character and prints it.

Other Character Sets

Printers use several other character sets in addition to the IBM ECS. With a few exceptions, all of these character sets contain the standard keyboard characters — upper- and lowercase letters, numbers, and punctuation marks. Every character set assigns these standard characters the same ASCII codes. These ASCII codes run from 32 to 127 and are often called "lower ASCII," or "standard ASCII." When a printer receives a lower ASCII code such as 65, it always knows to create an "A" character, no matter which character set it uses.

Problems can arise with the "extended ASCII" codes, which run from 128 to 255. Different character sets assign different characters to the extended ASCII codes. In the IBM ECS, the extended ASCII codes correspond to the special characters that don't appear on your keyboard, including the graphics characters that the line draw feature and Format Border command use. Other character sets may assign different characters to these codes, or none at all. That's why a special character may print as a different character or not at all.

For example, suppose your printer is a Hewlett-Packard LaserJet+ and you want to print a right chevron (»). To create a right chevron on screen, you hold down ALT and type *175*, the ASCII code assigned to the right chevron character in the IBM ECS. When you print, the » character is sent to the printer as an ASCII 175 code. The LaserJet+ does not use the IBM ECS, however. It uses a different character set which assigns a British pound sign (£) to the ASCII code number 175. So instead of printing as », the right chevron prints as £.

Fonts and Character Sets

Most printers can print a variety of fonts, and some can also use more than one character set. For example, the LaserJet Series II has 23 different character sets available. In those cases, different fonts may have different character sets. You may find, for example, that a line draw line which prints correctly in the Courier font will disappear if you switch to Helvetica.

Varieties of the IBM ECS

The IBM ECS is not necessarily the same on every printer. Some printers that support the IBM ECS print the special characters assigned to the ASCII codes below 32 while others do not. The ASCII codes below 32 are a special case because they can represent printer control codes as well as characters. Printers which use the printer control codes below ASCII 32 do not print special characters assigned to those code numbers.

Word reserves some ASCII codes below 32 for its own use. You cannot print characters assigned to those codes unless you modify your printer driver file. The procedure for doing so is described in "How to remap characters" in Chapter 6, "Using the MakePRD Program."

Format Border and Line Draw

The Format Border command and the line draw feature both use a series of IBM graphics characters to create lines on your screen. When it's time to print, however, the Format Border command works differently than the line draw feature and is more reliable with some printers.

The Format Border command is able to read Word's PRD file for the printer and determine the best printing strategy. If the printer can print IBM graphics characters, the Format Border command will use them, even if they're available in a different font than the one the box is formatted in. If graphics characters are unavailable, Word will substitute ordinary underline characters and vertical bars when it creates a border around a paragraph formatted with the Format Border command. In other words, Word can make adjustments to ensure that a box created with the Format Border command doesn't print as a series of foreign characters or as nothing at all. Word will even adjust line spacing so that no gaps appear between the vertical bars.

To print lines created by line draw, however, your printer must support IBM graphics characters, and you must format a line you draw with a font that supports IBM graphics characters. Each printer listing in Chapter 2 indicates whether a printer can print IBM graphics characters, and if so, which font is recommended for line draw. Formatting in the correct font is much simpler if you use the Line draw automatic character style. For more information, see Chapter 30, "Style Sheets," in *Using Microsoft Word.*

If your printer doesn't support IBM graphics characters, you can still use the line draw feature. Line draw's Hyphen/Bar set does not use graphics characters. You can select other non-graphics characters in the "linedraw character" field of the Options command.

How to Tell Which Characters Are Available on Your Printer

Word provides a macro, *character_test.mac*, that prints every character available in a font. The macro allows you to print out the character sets of as many fonts as you like. For more information on using *character_test.mac,* see the "Tips" section in Chapter 3, "Tips and Troubleshooting."

Appendix B
Using the MSPRINT File Format

Programmers can use the MSPRINT (Microsoft Print) generic file format to perform tasks that are too complex or are not available in a PRD file. The MSPRINT.PRD file is on the Supplemental Printer Disks.

Word uses MSPRINT for communicating with high end output devices such as computerized typesetting systems. MSPRINT contains information necessary to produce page images and can be translated to work with a variety of typesetting systems. You can write a program to translate the MSPRINT output to a format the typesetter can use.

To prepare for printing with MSPRINT

1. If you wish, you can copy the MSPRINT.PRD file and add your own specific fonts using the MakePRD program.
2. Write the program that will translate MSPRINT output to a format that serves your needs.

To print with MSPRINT

1. Make sure that MSPRINT.PRD or your new PRD file appears in the "printer" field of the Print Options command.
2. Choose **P**rint **F**ile.
3. Choose **L**ibrary **R**un to run the translation program you wrote.

The MSPRINT output file created by this procedure is written in printable ASCII code. When you look at the MSPRINT output file, you will see a list of commands separated by blanks or by a CR/LF (carriage return/line feed) combination. Each command consists of a list of operands, which are either numbers or text. Text operands appear within parentheses. Any apostrophe or parenthesis that appears within the operand itself will be preceded by an extra apostrophe or parenthesis. The last item in each command is the operation.

The operands, and the operations they carry out, are as follows:

x y P	Position. The *x* and *y* are integer coordinates in 1/20-point units (twips). Coordinates start at the upper-left corner of the sheet and increase down and to the right. Positions the baseline pointer for text to follow coordinates *x* and *y*.
t S	Show. The *t* is text. Shows text in the current font and face at current position. Advances the *x* coordinate the appropriate number of positions.
n C	Character. Shows character with character code *n* (a decimal integer).
x J	Justification. Sets the width of blanks (ASCII 0X20) to *x* 1/20-point units to simplify justification.

LU	Underline. Draws an underline relative to current baseline and with weight appropriate to current font from current position to the next LE.
LE	Ends underline (or double underline, strikethrough, or leader dots).
LD	Draws double underline.
LS	Draws strikethrough.
n LL	Leader characters. Draws leader characters with pattern *n*, where *n* is a number. Patterns are 0 for dots, 1 for hyphens, and 2 for underline.
n s F	Font. The *n* and *s* are numbers. Sets current font to the font known as font *n* in the PRD file, with font size *s*. Designates font size in points; you can use the decimal fraction 0.5.
B	Boldface. Changes current font to boldface.
I	Italic. Changes current font to italic.
BI	Bold italic. Changes current font to bold italic.
E	Changes current font to not bold, not italic.
PE	Page end.
x SFL	Page length is *x* (in 1/20-point units). The printer driver may check this information against its model of the paper stock.
BD	Starts subscript (baseline down).
BN	Ends superscript/subscript (baseline normal).
BU	Starts superscript (baseline up).
x SLL	Sets line length. Added for Mergenthaler. Byte:54 mod:1.

For example, if you translate this sentence into MSPRINT output:

This is an example of a Microsoft Print (MSPRINT) file.

the translation looks like this:

15840 SFL
1800 1680 P (This) S 345 J (is an example of a) S
1800 1920 P B (Microsoft) S 144 J (Print) S E (MSPRINT)
file.) S
PE

Additional commands with their operands may appear in some versions of the MSPRINT file format. If these commands do not apply to a particular printer driver, you can ignore them.

Appendix C
DAT File Format Specifications

This appendix presents the technical specifications for Word's DAT file format. It is included for software developers developing PRD files intended to work with Word's internal downloading program, which uses information in DAT files for downloading.

Bytes 1 and 2

The first two bytes of the DAT file contain a hex number to indicate the Word version number. For example, 0x0500 indicates Word 5.0. These bytes are new as of Word 5.0. If these bytes are not detected at the front of the DAT file, Word's downloading program issues a warning and continues if the user wishes.

Bytes 3 and 4

- Byte 3: count of number of download fonts (binary number).
- Byte 4: data type, download routine to use (binary number).

  0= Only one escape sequence is used for each font.

  1= Adobe Postscript downloadable fonts.

  2= Three strings are used for each font. The first and third are escape sequences; the second one is the font filename. See below.

Before and After Sequences

Bytes 3 and 4 are followed in order by the following information:

- 1 byte (binary number) indicating the length of the ASCII sequence following.
- An ASCII sequence to be sent before any fonts are downloaded. There is nothing here if the first length byte = 0. Escape E, the LaserJet reset code, is an example of a sequence that might go here.
- 1 byte (binary number) indicating the length of the ASCII sequence following.
- An ASCII sequence to be sent after all fonts are downloaded. There is nothing here if the second length byte = 0.

Font Download Description Bytes

The following bytes are repeated in order for each downloadable font. The DAT file length is dependant on the number of individual downloadable fonts available for the printer in question.

- 1 byte (binary number) representing the Word font number as stored in the Font Description section of the PRD file.

  If the typeface is normal (non-bold, non-italic), the number here is identical to the Word font number. That is, font 4 in the Word PRD file would be represented as 4.

  If the typeface is italic, the number here is the PRD file font number plus 64.

  If the typeface is bold, the number here is the PRD file font number plus 128.

  If the typeface is bold-italic, the number here is the PRD file font number plus 192.

- 1 byte (binary number) expressing the half-point size of the font.
- 1 byte (binary number) expressing the length in bytes of the first Printer Control Sequence (PCS), which follows.
- First Printer Control Sequence: the escape code(s) to be sent before this particular font is downloaded. If data type = 0, this is the only escape sequence.
- 1 byte (binary number) expressing the length in bytes of the second PCS, which follows.
- Second Printer Control Sequence: the font filename.
- 1 byte (binary number) expressing the length in bytes of the third PCS, which follows.
- Third Printer Control Sequence: the escape code(s) to be sent after this particular font is downloaded.

Note For the LaserJet, the first and third escape sequences for each font contain a unique ID number (different from the Word font number), which is preceded by the sequence "Escape*c" (decimal ASCII 27 42 99).

Note For filetype = 1 (Postscript download fonts)

The command sequence that needs to be included in the DAT file is the PostScript commands that load the font into printer memory.

Terms

ASCII The American Standard Code for Information Interchange (ASCII) is a code for exchanging text among computers and programs. Standard or "lower" ASCII code numbers range from 0 to 127 and correspond to the standard keyboard characters. "Extended" ASCII code numbers range from 128 to 256. Extended ASCII characters are not standardized and vary according to character set.

Autorotation A printer's ability to "rotate" a font so that it will print in either portrait or landscape orientation, depending on the dimensions of the page.

Bin feed A bin may be a paper tray or sheet feeder. In the "paper feed" field of the Print Options command, you can select Bin 1, Bin 2, Bin 3, or Mixed (for more than one bin at a time). If a printer has just one paper tray, "paper feed" should be set to Continuous. If a printer has two or more trays, or uses a sheet feeder, Word allows you to select which bin you want to use.

Bit map A method of creating a graphic image in which a bit is assigned to each dot that forms the image. Most personal computer graphics programs create bit-mapped images. On laser printers, bit-mapped images require large amounts of memory. If an image requires more memory than the printer has available, the image may not print.

Bold A character format in which characters are thicker or darker than plain characters.

CPI Stands for characters per inch, a common way to measure fixed-pitch fonts. *See also* Pitch.

Character set A character set is the collection of letters, numbers, punctuation marks, and symbols available for a font. A basic character set includes 95 characters (the standard keyboard characters). Character sets which have more characters — up to 256 — are *extended character sets*. The screen display characters are part of the IBM extended character set, which contains foreign characters, graphics characters, and math symbols in addition to the standard keyboard characters. Word's line drawing features use graphics characters from the IBM extended character set to create boxes and lines.

See Appendix A, "The Extended Character Set," in *Reference to Microsoft Word* for an explanation of how to enter the IBM extended characters and for a listing of the entire character set.

Compressed mode Many dot matrix printers offer a "compressed" mode that makes characters narrower. In Word, compressed mode is accessed through the "font size" field in the Format Character command. Word treats compressed mode as a smaller font size. *See also* Expanded mode.

Continuous feed Paper is fed to the printer automatically. Change the "paper feed" field of the Print Options command to "Manual" if you want to hand feed paper to a printer. *See also* Manual feed *and* Bin feed.

DPI Dots per inch. *See also* Resolution.

Daisywheel printer A typewriter-like printer that uses a "daisywheel" of type to print characters. Daisywheel printers generally cannot print graphics. On daisy wheel printers, italics formatting usually requires you to change the print wheel. Word will interrupt printing and prompt you for the change.

DAT (data) file A file provided with Word and used by Word's downloading program to download fonts.

Desktop publishing Involves preparing material for printing using a word processing or page layout program to set the type.

Dingbats Decorative characters. Dingbat characters include bullets, arrows, and paragraph marks. Dingbats are included in most character sets, and dingbat fonts are also available.

Dot matrix printer A printer whose print head uses pins to hit an ink ribbon. Dot matrix printers can generally produce graphics as well as a variety of fonts and character formats.

Downloadable fonts Also known as "soft fonts," downloadable fonts can be stored on disk and transferred, or "downloaded," to the printer when needed for printing. See Chapter 4, "Downloading Fonts," for instructions on how to use downloadable fonts with Word.

Draft mode On dot matrix and some other printers, draft mode is the default mode for the printer. Word always expects a printer to be in draft mode. With Word, you access other print modes directly from Word. For example, if a printer offers a letter-quality mode, you can select that feature by choosing letter-quality fonts (those with the "LQ" suffix) in the "font names" field of the Format Character command.

Duplex printing A printer that has duplex printing capability can print on both sides of a sheet of paper in one pass through the printer.

Elite A 12 characters per inch (10-point) fixed-pitch type. On some printers "Elite" is the name of a font that may include several type sizes.

Em dash In typeset text, an em dash replaces the double hyphen that represents a dash in typewritten text. An em dash is appropriate in proportional fonts such as Helvetica or Times Roman. For information on how to create an em dash (and other special characters), see Chapter 3, "Tips and Troubleshooting."

Escape code Many printers, including Epsons and Hewlett-Packard LaserJet printers, interpret character sequences preceded by an escape character as commands. Escape E, for example, is the command to reset an HP LaserJet printer. You don't need to use escape commands with your printer since Word controls the printer for you. If you want to take direct control of your printer, Word lets you insert commands into your document. For more information, see Chapter 3, "Tips and Troubleshooting."

Expanded mode Many dot matrix printers offer an "expanded" mode that makes characters wider. In Word, expanded mode is accessed through the "font size" field of the Format Character command. Word treats expanded mode as a larger font size. *See also* Compressed mode.

Fixed-pitch font A font in which each character is allocated the same width. Fixed-pitch fonts include Pica, Courier, and Prestige. "Non-proportional" and "monospace" are other terms for fixed-pitch. *See also* Proportional font.

Font Word defines a font as a set of characters in a variety of styles (italic, bold, and so on) and sizes that share the same typeface. For example, Courier and Pica are both fonts. Some printers treat different typeface sizes and styles as separate fonts.

Generic font name Word assigns a generic font name to every font. If you press F1 in the "font name" field of the Format Character command, you can see the generic font name in parentheses next to the name the printer gives to a font. For example: *Courier (modern a)*. Generic font names help to provide compatibility between printers.

Graphics Graphics is a shorthand way of referring to graphic images or pictures. With Word you can print bit-map and vector graphics.

Handshaking A convention that determines how information is communicated between two devices such as a computer and a printer. Printers that use a serial connection require the DOS or OS/2 MODE command to set handshaking parameters. *See also* Protocol.

IBM extended character set *See* Character set.

Initialization (INI) file PostScript printers and some other printers must receive an initialization file before printing. INI files are stored with Word's PRD files and automatically installed with the PRD files by the Setup program.

Italics A character format that slants characters forward. On some printers, italics is a separate font, and has to be chosen in the "font name" field of the Format Character command. If a printer cannot print italics, Word substitutes an underline.

Justified Justified text is flush on both the left and right margins. *See also* Microspacing.

Landscape orientation The orientation of a page so that the horizontal dimension is greater than the vertical one. For example, if a letter-sized (8 1/2-by-11-inch) sheet has landscape orientation, the printer prints across the 11-inch width. *See also* Portrait orientation.

Laser printer A laser printer uses a laser beam to produce images on a photosensitive drum. The process is similar to the way photocopiers print.

Leading A typographical measurement used to express vertical spacing between lines. *See* Line spacing.

Line spacing The space between lines of type. If the "line spacing" field of the Format Paragraph command is set to Auto, Word automatically adjusts the line spacing for the largest font size in a line.

MakePRD A Word utility that allows you to create or modify a PRD file. MakePRD translates binary PRD files to text format and vice-versa. See Chapter 6, "Using the MakePRD Program," for more information.

Manual feed Lets you insert paper into a printer by hand, one sheet at a time.

MergePRD A Word utility that allows you to combine fonts from different PRD files, to add support for downloadable PostScript fonts, to change the line drawing font, to add sheet feeder support, and to change the symbol set of LaserJet fixed-pitch fonts. See Chapter 5, "Using the MergePRD Program," for more information.

Microspacing A technique printers use to place an equal amount of space between each word when justified margins are set. If a printer doesn't do microspace justification, Word uses full spaces to justify text, and margins may not align perfectly if you use different font sizes in a document.

Monospaced font *See* Fixed-pitch font.

MSPRINT A Word file format programmers can use to convert Word documents for computerized typesetting systems. See Appendix B, "Using the MSPRINT File Format."

NLQ Stands for "near letter quality." On many dot matrix printers, NLQ is offered as a print mode. In Word, NLQ is accessed through the "font name" field of the Format Character command. That is, Word treats NLQ mode as a font or fonts. For example, the Pica font in NLQ mode might be listed in the "font name" field as Pica-NLQ.

Orphan The first line of a paragraph appearing on the last line of a page. To be avoided. Word has automatic widow/orphan control to prevent orphan lines. *See also* Widow.

Page description language Page description languages work with laser printers that use an internal microprocessor to create a full page image before printing the page. PostScript is a standard page description language.

Parallel connection A printer has a parallel connection to a computer if it's connected through parallel ports and a parallel cable. Some printers can use either a parallel or a serial connection. A parallel connection is faster than a serial one. *See also* Serial connection.

Pica A 10 characters per inch (12-point) fixed-pitch type; also a typographical unit of measurement equal to 1/6 inch. On some printers, Pica is the name of a font that may include several type sizes.

Pipe character A vertical bar character with a hole in the center (¦). Some printers print solid vertical bars; others print pipe characters.

Pitch A unit of width that measures how many characters fit side by side in one inch. Pitch is generally used to describe fixed-pitch (typewriter-style) fonts whose character widths do not vary. The pitch number equals the number of characters that can fit in one inch; for example, 10-pitch equals ten characters per inch.

If you are trying to determine in advance how many characters will fit in a space, it can be useful to convert the size of a font from points to pitch. To convert points to pitch, divide 120 by the number of points.

Point A measurement used to describe the height of a character. The sizes that appear when you press F1 in the "font size" field of the Format Character command are in points, as are the font sizes included in the printer listings in Chapter 2, "Supported Printers." A point is equal to 1/72 inch.

Port A socket in the back of a computer or printer where you can plug in a cable. Printer ports are either parallel or serial. An illustration of parallel and serial ports appears in Chapter 1, "Using Word with Printers."

Portrait orientation The orientation of a page so that the vertical dimension is greater than the horizontal. Portrait orientation is the normal orientation of letter-sized paper. *See also* Landscape orientation.

PostScript A page description language used by the Apple LaserWriter and other printers. *See also* Page description language.

Print head The printer element which puts marks on paper. For laser printers, the exact place where the printer makes its marks on the paper.

Print wheel On a daisywheel printer, an interchangeable wheel with a character set in a particular font and size.

Printer driver (PRD) file A file that describes the particular capabilities of a printer and tells Word how to use them. When you use the Setup program to select a printer, Setup copies the appropriate PRD file to your program disk or directory along with any associated DAT and INI files. PRD files have the extension .PRD and can be found on the Printer and Utilities Disks and on the Supplemental Printer Disks.

Printer memory Memory built-in to the printer used to store text and formatting commands. The size of a laser printer's buffer determines how many downloadable fonts it can use and how large of a graphic image it can create.

Proportional font A font in which different characters are allocated different widths. For example, an "i" character is given less space on a line than a "w" character in a proportional font. Proportional fonts are more compact than non-proportional ones, and give text a more finished, typeset look. *See also* Fixed-pitch font.

Protocol A convention that determines how information will be communicated between two devices, such as a computer and a printer, and when to start and stop sending information. Most serial printers use a protocol called XON/XOFF. Diablo printers and compatibles use ETX/ACK.

Raster graphics *See* Bit map.

Resolution The number of dots per inch (DPI) used to represent a character or graphic image.

Sans Serif Means "without serif." Popular sans serif fonts include Helvetica and Avant Garde. *See* Serif.

Serial connection A printer has a serial connection to a computer if it is connected through serial ports and a serial cable. You must use the DOS or OS/2 MODE command before printing with a printer that uses a serial connection.

Serif Small cross-strokes that end the major strokes that make up a letter. Times Roman is a serif font. *See also* Sans serif.

Small capitals Lowercase letters printed in uppercase, but in the next smaller font size. Uppercase letters are printed in their normal size.

Subscript Characters that print below the normal line level.

Superscript Characters that print above the normal line level.

Supplemental Printer Disks The PRD files for some printers are stored on the Supplemental Printer Disks. You can obtain these disks from your dealer, from the Microsoft RoundTable on GEnie, the Microsoft Forum on CompuServe, and from Microsoft Product Support.

Twip A unit of measurement used in Word's PRD files and described in Chapter 6, "Using the MakePRD Program." A twip is equal to 1/1440 inch.

Typeface *See* Font.

Unprintable region An area near the edge of a page where a printer cannot print. Laser printers and printers that use sheet feeders typically cannot print all the way to the edge of the paper.

Vector graphics Graphic images created by mathematical routines, rather than bit-mapping. PostScript graphics are vector graphics.

Vertical bar/underline A method used by the Format Border command to draw lines and boxes when IBM graphics characters are unavailable.

Widow One or two lines at the top of a page that belong with a paragraph on the preceding page. Word has automatic widow/orphan control to prevent widow lines. *See also* Orphan.

Index

Adobe Font Metrics (AFM) file 191, 197, 201, 206
Adobe PostScript downloadable font *See* PostScript font
AFM file *See* Adobe Font Metrics (AFM) file
Alignment *See* Justification; Paper
ALPS printers
  ALQ 200/300 model 20-21
  P2000 model 18, 21-22
American Standard Code for Information Interchange (ASCII) *See* ASCII
Anadex printers
  DP-6500 model 18, 22-23
  DP-9625 model 18, 23-24
  DP-9725 model 18,24-25
  WP-6000 model 18, 25-26
Apple LaserWriter printers
  See also Laser printer; PostScript printer
  PostScript page description language 266, 267
  printer listings 26-29
Area fill pattern *See* Fill pattern
Arrow character 264
ASCII
  See also Extended character set; Special character
  Character Width Table (CWT) values 227
  codes, listing with test macro 174
  codes reserved for Word 178, 250, 256
  control code conversion 213-214
  defined 263
  extended codes 255-256
  mapping character *See* Mapping
  paragraph shading characters 217
AST printer
  TurboLaser model 29-30
  TurboLaser/PS model 30
AUTOEXEC.BAT file 5
Automatic line feed switch 5
Autorotation
  See also Landscape orientation; Portrait orientation
  defined 263
  landscape mode printing tips 176
Autorotation *(continued)*
  LaserJet printer 81, 197
  MergePRD program use 197
  OrientationFlag 219
Available characters *See* Character
Available fonts/font sizes
  See also Font; Line drawing font; *specific printer listing*
  display/print/save list 205
  Font Description, PRD text file 212, 222-223
  FontsNotSupported flag 221
  printer listing information 14-16
  troubleshooting 185

Backup file 197, 210
Baud *See* Handshaking
Bidirectional printing
  PCSD bytes 234
  troubleshooting 185
Bin feed/sheet feeder
  See also Continuous paper feed; Manual paper feed; Paper feed
  adding support with MergePRD 196, 203, 205, 266
  BinsSupported flag 221-222
  defined 263
  LaserJet printer 80
  PCSD bytes 229, 231-232
  printer listing information 13
  selecting 7, 263
  troubleshooting 180
Bit map graphics
  See also Raster device; Vector graphics
  defined 263, 265
  raster device use 235
  vector graphics differentiation 268
  vertical drawing capability 237
Bold character format
  See also Bold-italic character format; Character format
  bold font 225-226
  character width 224
  DAT file format specifications 262

Bold character format *(continued)*
defined 263
line drawing font 196
PCSD bytes 213, 229, 232-233
printer listing information 14
screen display 9
Bold-italic character format
See also Bold character format; Character format; Italic character format
bold-italic font 225-226
character width 224
DAT file format specifications 262
Border/boxes *See* Format Border command; Line drawing
Brother printers
BPI 5420AI *See* Seikosha printer
HR-15/25/35 models 30-31
M-1509/1709 models 18, 31-32
M-1724L model 32-33
PCSD bytes 231
SP-1000 model *See* Seikosha printer
Twinwriter 5 model 18, 33-35
Buffer *See* Memory, printer
Bullet character
dingbat character 264
storing as macro 175
Businessland 45LQ printer 35-36
Byte
DAT file format specifications 261-262
graphics mode duplicating requirement 239
PCSD bytes 229-234

C.Itoh printers
C-310/15 XP and CXP models 36-37
C-715A Reliant model 37-38
CIE LIPS 10 Plus model 18, 38-40
F10-40/55 models 18, 40-41
Jet-Setter model 41-43
ProWriter 815 Supra model 43-44
ProWriter Junior model 18, 44-45
Starwriter FP-1500-45-P model 19, 45-46
Cable *See* Interface; Serial connection
Canon printers
BJ-130 Bubble Jet model 46-47
LBP-811/811R/811T models 48-49
LBP-8A1/A2 model 18, 47-48
Capitals, small *See* Small capitals
Caret (^) character
running head format indicator 181
Caret (^) character *(continued)*
Character Translation Table (CTT) use 253
precedes control code 213
Cartridge font *See* Font cartridge
Changing printers 9
Character
See also Character set; Extended character set; IBM extended character set; Special character
arrow 264
ASCII *See* ASCII
bullet *See* Bullet character
caret (^) *See* Caret (^) character
character_test.mac macro 174, 257
compressed *See* Compressed mode
decorative 264
em dash *See* Em dash character
extended *See* Extended character set; IBM extended character set
foreign *See* Special character
format *See* Character format
graphics character *See* Graphics
height *See* Font size; Point
IBM *See* IBM extended character set; IBM graphics character
italic *See* Italic character format
line drawing *See* Line drawing; Line drawing font
paragraph mark 264
pipe *See* Pipe character (|)
resolution *See* Resolution
serif 268
small capitals 14, 268
spacing *See* Fixed-pitch font; Proportional font
special character *See* Special character
subscript *See* Subscript
superscript *See* Superscript
translation *See* Character Translation Table (CTT)
width *See* Character width
Character format
See also Character; Print mode; Subscript; Superscript; Underline
bold *See* Bold character format
bold-italic *See* Bold-italic character format
DAT file format specifications 262
italic *See* Italic character format
line drawing font *See* Line drawing font
PCSD bytes 212, 213, 229

Character format *(continued)*
screen display 9
special character 175
troubleshooting 182, 185
Character Sequence Description (CSD) 228-229
Character set
See also Extended character set; LaserJet printer; Special character
changing *See* LaserJet printer
character_test.mac macro 174, 257
decorative characters 264
defined 263
extended *See* Extended character set; IBM extended character set; Special character
font restrictions 256
graphics characters *See* Graphics
IBM *See* IBM extended character set; IBM graphics character
LaserJet printer *See* LaserJet printer
memory restrictions 191
print wheel 267
standard keyboard 255, 263
symbol set *See* LaserJet printer
character test.mac macro 174, 257
Character Translation Table (CTT)
caret (^) entering 253
CTP flag indicator 216-217, 223
special character mapping 227-229, 249-251
Character width
See also Font size
compressed *See* Compressed mode
expanded *See* Expanded mode
measuring *See* Fixed-pitch font; Pitch; Proportional font
Character Width Table (CWT)
CTT correspondence 228
downloadable font support 249
FontSize flag 253
described 212, 226-227
scalable font restriction 234
swapping 215
Wtps label 224
Characters per inch (CPI) *See* Pitch
CHARTEST.DOC file 174
Citizen printers
MSP-10/15 models 49-50
MSP-50/55 models 50-51
Color monitor
See also Color printing
character format display 9
hidden text 181
Color printing
See also Color monitor
color graphics
Graphics Device Description 235-236
interlacing restriction 239
mixing colors 235-236
raster graphics 238, 242
string examples 240, 242
troubleshooting 186
PCSD bytes 234
color text 219, 234
printer listing information 12
white printing 219, 234
COM port connections *See* Serial port
Combining fonts 196, 199-200, 266
COMMAND.COM 189
Communication between printer and computer *See* Handshaking; Protocol
Compressed mode
See also Expanded mode; Print mode
bold formatting restriction 224
defined 263
selecting 2, 16, 186
CompuServe Microsoft Forum
Supplemental Printer Disks
source 12, 18, 268
using unsupported printers 10
Configuration switch *See* Dip switch
Continuous paper feed
See also Bin feed/sheet feeder; Manual paper feed; Paper feed
continuous fan-fold paper 3
defined 264
LaserJet printer 80
printing problems, troubleshooting 180
selecting 7, 263, 264
Control code
See also Escape code
ASCII codes 178, 213-214, 256
beginmod flag 224
Character Translation Table (CTT) 227-229
color printing 234, 238, 240, 242
entering
in document 2, 178
in hexadecimal or octal 213-214, 229
in PRD text file 210, 213-214, 229

Control code *(continued)*
Graphics Device Description 212, 235-244
Printer Control Sequence Description (PCSD) 212, 229-234
sheet feeder
MergePRD program 203, 205
PRD text file 213, 229, 231-232
Control panel
See also Dip Switch
printing problems, troubleshooting 179, 182
use restrictions 2, 3, 5
Converting
control code to ASCII character 213-214
pitch to points 2, 17, 223, 267
PRD file to text format 210-212, 266
Copies, selecting number of 6
Cordata LP300/Corona LP300 printer 18, 51-52
Correspondence quality (C)
See also Letter quality (LQ); Near letter quality (NLQ)
font name suffix 16
CPI (characters per inch) *See* Pitch
CTT *See* Character Translation Table (CTT)
CWT *See* Character Width Table (CWT)

Daisywheel printer
defined 264
generic PRD file 10
italic font 14, 264
print wheel *See* Print wheel
PrinterType flag 214
using with Word 2-3
Dash *See* Em dash character
DAT (data) file
DAT file not found message 193
defined 264
DownloadFlag 220-221, 249
downloads font as temporary font 192
file organization
downloading 180, 188-189, 193
MergePRD program 198
format specifications 261-262
PSDOWN.DAT file 201
Setup program copies with PRD file 189, 267
DEC LN03 Laser printers 18, 53
Default font
10-pitch/draft mode default 2, 5, 264
changing 185
fixed-pitch/font size requirement 223
Deleting font/font size 196, 200, 202, 206
Desktop publishing
See also Layout; Typesetting
defined 264
special paper 177
Device, graphics *See* Graphics
Diablo printers
620 model 18, 54
630/630API/630 ECS models
printer listings 55-56
printer emulation 210
Supplemental Printer Disks 18
ETX/ACK protocol *See* ETX/ACK protocol
Graphics Device Description 239
P32 model 18, 56-57
Dingbat 264
Dip switch
See also Control panel
troubleshooting 179, 182
settings 5
DIR command 189
Disk
floppy *See* Floppy disk
hard *See* Hard disk
supplemental *See* Supplemental Printer Disks
Display
available font/font size 205
layout/line breaks 8
screen display *See* Screen display
selected font/font size 205, 206
DOS operating system
See also OS/2 operating system
DIR command 189
DOS compatibility mode under OS/2 5, 179, 198
MKDIR command 189
MODE command *See* MODE command
Dot matrix printer
adding support for downloading 189
defined 264
generic PRD file 10
landscape mode printing 175

Dot matrix printer *(continued)*
paper alignment 7, 177
print modes *See* Print mode
PrinterType flag 214
sheet feeders *See* Bin feed/sheet feeder
speed improvement 177
using with Word 2-3
Dots per inch (DPI)
See also Resolution
defined 264, 268
laser printer 213
printer listing information 13
Double-sided printing *See* Duplex printing
Double underline *See* Underline
Doublestrike (DS) fonts 16
Download file not found... message 193
Downloadable font
See also Downloading
adding support for downloadable font
MakePRD program 189, 249
MergePRD program 130, 191, 200-201, 206, 266
bold font availability 225-226
character set, alternative 204
combining with other fonts 196, 199-200, 266
defined 188, 264
deleting fonts/font sizes 196, 200, 202, 206
DownloadFlag 220-221
downloading *See* Downloading
file not found... message 193
file organization 188-189, 193
italic font availability 225-226
laser printer use 3
LaserJet printer fonts 13, 79, 83, 188, 192-193
MakePRD program support 189, 249
memory restrictions 184, 191, 267
MergePRD program support 131, 191, 200-206, 266
permanent font 192
PostScript *See* PostScript font
printer listing information 13, 16
selecting
automatic downloading 3, 188
procedure 190
troubleshooting 7, 185
storing on disk 189
Supplemental Printer Disks 13, 18, 19
Downloadable font *(continued)*
temporary font 192
troubleshooting 183, 184
Downloading
See also Downloadable font
automatic downloading 3, 188
canceling 193
DAT file *See* DAT (data) file
file organization 80, 188-189, 193
INI file *See* INI file
LaserJet printer 80, 188, 192-193
memory restrictions 191, 193
messages, troubleshooting 193
permanent font 192
PostScript font *See* PostScript font
preparing to download 188-189
procedure 190-191
temporary font 192
Downloading fonts... message 193
Draft mode
beginmod label, PRD text file 224
default mode 2, 5, 264
defined 264
Microspace flag 215
printing speed improvement 6, 177
restrictions 6, 9, 184, 185, 186
selecting 6
Duplex printing
defined 264
Model Block, PRD text file 216, 219
PCSD bytes 232
selecting 7

Elite
See also Pica
defined 2, 264
Font Assignment Table 251
Em dash character
defined 264
mapping to keyboard 175, 250
printing 175
Emulating printer 10, 210
Encounter too long a string message 254
Envelope feed
See also Bin feed/sheet feeder; Paper feed
adding support, MergePRD program 196, 203

Envelope feed *(continued)*
BinsSupported flag 216, 221-222
LaserJet printer 80
PCSD bytes 232
printer listing information 13
Epson printers
EX-800/1000 models 57-58
FX Series models 58-59
GQ-3500 model 18, 60-61
Graftrax *See herein* MX-80/100 models
JX-80 model 61-62
LQ-500 model 62-63
LQ-800/1000 models 64-65
LQ-850/1050 models 65-66
LQ-1500 model 66-67
LQ-2500 model 67-68
LX-80/86 models 68-69
LX-800 model 69
MX-80/100 models 18, 70-71
printer emulation 10, 210
RX-80/100 models 71
SQ-2000 models 72
Error message *See* Message
Escape code
See also Control code
defined 264
entering
in document 3, 178
in PRD text file 213, 224
sheet feeder codes 203
ETX/ACK protocol
defined 267
printing problems, troubleshooting 183
SerialInterface flag 215
setting 5, 215
Exiting *See* Quitting
Expanded mode
See also Compressed mode
defined 265
selecting 2, 16, 186
Extended ASCII codes 255-256
Extended character set
See also ASCII; Character set; Special character
defined 255, 263
graphics character *See* Graphics
IBM *See* IBM extended character set; IBM graphics character
Legal character set 80
non-IBM extended character sets 255-256
Extended character set *(continued)*
PC-8 extended character set 80, 84

File
backup 197, 210
naming PRD file
MakePRD program 211
MergePRD program 200, 201
organization for downloading 80, 188-189, 193, 198
Fill pattern 238, 240, 243-244
Film
See also Transparency
Graphics Device Description 237
Fixed-pitch font
See also Pitch; Proportional font
default font 223
defined 265
measuring character width
in pitch 263, 267
Wtps label 213, 224
Flags, PRD text file
Add flag 239
aFillPatterns flag 238
aLineStyles flag 238
aRotFillPatterns flag 240
AutoSkipLeft flag 220
AutoSkipTop flag 220
beginBoldmod label 225
beginItalBoldmod label 225
beginItalicmod label 225
beginmod label 224
BinsSupported flag 221-222
Bits flag 239
byte flag 229
cAvailcolors flag 238
cCSD flag 228-229, 250
ColorFlags 219
ColorMod flag 219
ColorPlanes flag 238
cPMDs flag 216
cPrefColors flag 238
cPSDs flag 223
CTP flag 223
DevInfo flag 236-237
DimPageH flag 237
DimPageV flag 237
DimPenH flag 237
DimPenV flag 237

Flags, PRD text file *(continued)*
DLF (download fonts) flag 225-226
Downloadflag 220-221, 249
DuplexFlag 219
dxaMin flag 214
dyaMin flag 214
endBoldmod label 225
endItalBoldmod label 225
endItalicmod label 225
endmod label 225
FontName flag 226
FontSize flag, Character Width Table (CWT) 227, 253
FontSize label, Printer Sequence Description (PSD) 223, 253
FontsNotSupported flag 221
GraphicsNotSupported flag 221
InhibitCTT flag 216-217
InhibitRevLF flag 217
IniFile flag 222
LineDrawAdjust flag 218-219
LineDrawAutoMap flag 217
LineDrawFlag 217-218
LineDrawFont flag 218
LineDrawNoShade flag 217
LineSpacing flag 226, 234
Magic field 230, 234
Mask flag 239
MergePRD program restrictions 207
Microspace flag 215
ModelName flag 222
OrientationFlag 219
ParmType flag 239
Pens flag 238
PixHeightDenom flag 239
PixHeightNumer flag 239
PixInterlaceDenom flag 240
PixInterlaceNumer flag 240
PixPageH flag 237
PixPageV flag 237
PrinterType flag 214
Procedures flag 237
RasterInfo field 238
sBeginGraphics1 flag 240
sBeginGraphics2 flag 240
sBlack flag 240
sBlueYellow flag 240
sDevName flag 238
sEndColor flag 240
sEndGraphics flag 241
Flags, PRD text file *(continued)*
SerialInterface flag 215
sGreenMagenta flag 240
Shift flag 239
SpecialFlags 215
sRedCyan flag 240
sSetup flag 241
Twice flag 239
UnprintableBottom flag 220
UnprintableLeft flag 220
UnprintableRight flag 220
UnprintableTop flag 220
Value field 230, 234
Wtps label 224, 227, 253
Floppy disk
download file not found... message 193
downloadable font storage 189
Font
See also Downloadable font; Font name
assignment *See* Font Assignment Table
available *See* Available font/font size 205
character set *See* Character set
character_test.mac macro 174, 257
combining fonts 196, 199-200, 266
compressed *See* Compressed mode
correspondence quality (C) 16
creating font restriction 197
default *See* Default font
defined 265
deleting 196, 200, 202, 206
description *See* Font Description, PRD text file
dingbat 264
doublestrike (D) 16
downloadable *See* Downloadable font
downloading *See* Downloading
draft *See* Draft mode
duplication between fonts 200, 202
expanded *See* Expanded mode
family See Generic font name
fixed-pitch *See* Fixed-pitch font
generic *See* Generic font name
information, printer listings 14-16
italic *See* Italic character format
landscape *See* Landscape orientation
letter quality (LQ) 2, 16, 264
line drawing font *See* Line drawing font
name *See* Font name
near letter quality (NLQ) *See* Near letter quality (NLQ)

Font *(continued)*
number of fonts restriction 79, 182, 193
number allowed in PRD file 223
numbering system *See* Font Assignment Table
permanent font 192
PostScript *See* PostScript font
print mode *See* Print mode
printer listing information 14-16
proportional *See* Proportional font
rotation *See* Autorotation
sans serif font 268
scalable font 3, 234
screen display *See* Screen display
selecting
See also Font Assignment Table
character_test.mac macro 174
downloading 190
MergePRD program 199-200, 205, 206
troubleshooting 7, 182, 185
serif font 268
size *See* Font size
soft *See* Downloadable font
substitution if download file not found 193
temporary font 192
unsupported fonts 221
Font Assignment Table
described 251-253
Font Description, PRD text file 223
MergePRD PostScript font support 201
Font cartridge
character set, alternative 204
combining fonts 196, 200
deleting font/font sizes 196, 200, 202
font duplication 200, 202
font selection, troubleshooting 7, 182, 185
LaserJet printer 13, 79, 80, 83-84
memory conservation 191
printer listing information 13, 16
Font Description, PRD text file
adding support for downloadable font 249
DAT file format specifications 262
described 212, 222-226
Font Assignment Table 223, 251-253
Font Information, printer listings 14-16
Font name
changing
Format Character command 185
MakePRD program 200, 223, 251-253
duplicate font names 200, 202
Font name *(continued)*
FontName flag 226
generic *See* Generic font name
numbering system *See* Font Assignment Table
printer listing information 14-16
suffixes 16
unsupported fonts 221
Font size
See also Character width; Pitch; Point
available *See* Available font/font size
changing 185
compressed *See* Compressed mode
default size *See* Default font
deleting 196, 200, 202, 206
expanded *See* Expanded mode
fixed-pitch *See* Fixed-pitch
Font Description, PRD text file 222-223
FontSize flag, Character Width Table (CWT) 227, 253
FontSize label, Printer Sequence Description (PSD) 223, 253
LaserJet printer restriction 193
line spacing adjustment 181, 266
measuring *See* Point
memory restrictions 181, 191
microspace justification restriction 14, 266
Pica *See* Pica
Printer Sequence Description (PSD) 223-226, 249
proportional font *See* Proportional font
scalable font 3, 234
screen display 8, 9
selecting
compressed/expanded mode 2, 16, 186
MergePRD program 199-200, 205, 206
troubleshooting 7, 182, 185, 186
small capitals 14, 268
Footnotes 8
Foreign character *See* Special character
Foreign generic font 223, 252
Form document 181
Form feed *See* Line feed
Format Border command
box adjustments 218-219
line drawing *See* Line drawing; Line drawing font
special characters 255
Format Character command
compressed/expanded modes 186, 263, 265

Format Character command *(continued)*
font selection, troubleshooting 182, 185
font size in points 2, 17, 267
FontName flag 226
FontsNotSupported flag 221
generic font names 251-253, 265
italic font, selecting 265
LinedrawFont flag 218
near letter quality (NLQ) 266
print mode, selecting 2, 264
printer listing font information 14
Format Division Margins command
landscape mode printing 175, 176
paper alignment 7, 177, 185
unprintable regions 13, 80, 220
Format Paragraph command 181, 266
Formatting
character *See* Character format
paragraph 175, 185
troubleshooting 181, 182, 185
Formatting... message 181
Fujitsu printer
DL2400 model 18, 72-73
DL2600/5600 models 74
DX2300/2400 models 75
Full page image *See* Page description language; Print preView feature

Garbled printing, troubleshooting 182-183
Generic font name
defined 265
numbering system 223, 251-253
PostScript font family 201
Generic (TTY) PRD file
See also MSPRINT file format
control code use 178
garbled printing, troubleshooting 183
Supplemental Printer Disks 19
using for unsupported printer 10, 12, 210
GEnie Microsoft RoundTable 10, 12, 18, 268
Graftrax *See* Epson printer
Graphics
adding support *See* Graphics Device Description; Graphics Device Procedures
bit map *See* Bit map graphics
character
See also Linedraw character field
creating 227

Graphics *(continued)*
character *(continued)*
IBM *See* IBM graphics character
color graphics *See* Color printing
daisywheel printer restriction 264
data transmission 239
defined 265
devices
color printing *See* Color printing
description *See* Graphics Device Description
procedures 212, 213, 237
raster *See* Raster device
raster/vector *See* Raster/vector device
unsupported devices 216, 221
vector *See* Vector device
dot matrix printer capabilities 264
dots per inch *See* Dots per inch (DPI)
draft mode restrictions 6, 9, 184
IBM graphics character *See* IBM graphics character
interlacing 239-240
layout 8-9
line drawing *See* Line drawing
memory restrictions
downloading font 191
laser printer 14, 267
running out of memory 182, 184
mode *See* Graphics mode
paragraph shading 13, 217, 218
printer listing information 14
printing problems, troubleshooting 182, 184
raster *See* Bit map graphics; Raster device
resolution *See* Resolution
vector *See* Vector graphics
vertical drawing capability 237
Graphics Device Description
described 212, 235-241
string examples 241-244
Graphics Device Procedures 212, 213, 237
Graphics mode
control codes 240-241
screen display 9

Handshaking
See also Protocol
defined 265
downloading, troubleshooting 193

Handshaking *(continued)*
SerialInterface flag 215
setting 3, 5, 265
printing problems, troubleshooting 181, 183
Hard disk
downloadable font storage 189
downloading, troubleshooting 193
Header, PRD text file 212, 214-215
Headings, previewing printed document 8
Hewlett-Packard printers
2934A model 18, 76
DeskJet 2276A model 77-78
LaserJet Series *See* LaserJet printer
PaintJet model 92-93
QuietJet Plus model 93
ThinkJet model 19, 94
Hexadecimal code 203, 213-214, 229
Hidden text 6, 181
HP-GL file 238
Hyphen *See* Em dash
Hyphen/Bar line drawing 257

IBM extended character set
See also ASCII; Character set; Extended character set; Special character
character test macro 174
creating/emulating character 227-229
defined 255-256, 263
graphics characters *See* IBM graphics character
InhibitCTT flag 216
line drawing *See* Line drawing
mapping character *See* Mapping
PCSD byte 232
screen display 174
IBM graphics character
See also IBM extended character set; Line drawing
creating/emulating character 227-229
defined 255, 263
line drawing *See* Line drawing
mapping character *See* Mapping
paragraph shading 13, 217, 218
printer listing information 13, 14
IBM printers
Color Inkjet model 19, 94-95
IBM printers *(continued)*
Graphics Printer model 95-96
Pageprinter (3812) model 96-98
Personal Pageprinter 4216 model
IniFile flag 222
SerialInterface flag 215
printer listings 98-99
Proprinter Series models 19, 99-101
Quickwriter model 101-102
Quietwriter models 103-105
Wheel Printer model
line spacing modification 251
printer listings 105-106
Image *See* Graphics
INI file
defined 265
DownloadFlag 220-221
file organization
downloading 188-189
MergePRD program 198
IniFile flag 222
MergePRD program restriction 207
PSDOWN.INI 191, 201
Setup program copies with PRD file 189, 267
Insufficient memory message 193
Interface
See also Control panel; Dip switch
checking connection 3-5, 179-180, 193
defined 4
Header, PRD text file 212, 214
interchangable connection 266
parallel *See* Parallel connection
port *See* Port
serial *See* Serial connection
Interlacing 239-240
Italic character format
See also Bold-italic character format; Character format
character width 224
DAT file format specifications 262
defined 265
italic font
control codes 225-226
daisywheel printer use 14, 264
defined 265
PCSD bytes 213, 233
printer listing information 14
screen display 9
underline substitution 14, 265

Itoh printers *See* C.Itoh printers

Justification
  justified text defined 265
  microspace *See* Microspace justification
  printer listing information 14

Keyboard
  extended *See* Extended character set; Special character
  mapping character *See* Mapping
  standard keyboard 255, 263
Kyocera F-1010 printer 19, 106-107

Labels, laser printer use 177
Landscape orientation
  See also Autorotation; Orientation; Portrait orientation
  defined 265
  graphics printing page parameters 237
  LaserJet printer 83, 232
  MergePRD program restriction 197
  OrientationFlag 219
  PCSD byte 232
  printing tips 175-176
Laser printer
  defined 265
  dots per inch, measuring 213
  landscape orientation printing 176
  LaserJet printer *See* LaserJet printer
  LaserWriter *See* Apple LaserWriter printer
  memory restrictions 14, 267
  page description language 266, 267
  print head
    dxaMin flag 214
    defined 267
  print quality 177
  PrinterType flag 214
  sSetup flag 241
  scalable fonts 3, 234
  using with Word 3
LaserJet printer
  See also Laser printer
  autorotation capability 81, 197
LaserJet printer *(continued)*
  character set/symbol set
    See also Character set
    changing, MergePRD program 197, 199, 204-205, 206, 266
    font restriction 256
    extended character set use 80, 84, 256
    Legal character set 80
    PC-8 extended character set 80, 84
    proportional font restriction 204, 206
  combining fonts 79
  DAT file format specifications 262
  deleting fonts/font sizes 79
  downloadable font 13, 79, 83, 188, 192-193
  downloading font 80, 188, 192-193
  font cartridge 13, 79, 80, 83-84, 196
  line drawing font 80
  landscape orientation 81, 83
  memory restrictions 79
  number of fonts allowed 79, 193
  paper feed 80
  PCL language non-Word feature 178
  permanent/temporary fonts 192
  printer emulation 10, 210
  printer listings
    downloadable font PRD files 87-92
    general information 79-81
    internal font PRD file 84
    landscape cartridge PRD files 87
    model information 81-83
    portrait cartridge PRD files 84-87
    PRD file and font information 13, 80, 83-84
  Select Fonts and Font Sizes menu described 199-200, 206
  special characters 256
  Supplemental Printer Disks 19
  symbol set *See herein* character set/symbol set
  unprintable regions 80
LaserWriter printer *See* Apple Laserwriter printer
Layout
  See also Desktop publishing
  previewing 8, 177
Leading
  See also Line spacing
  defined 265
Legal character set 80

Letter quality (LQ)
See also Near letter quality (NLQ)
selecting 2, 16, 264
Library Run command 259
Line break
See also Page break Paragraph;
draft mode 6
screen display 8
troubleshooting 182
Line draw feature *See* Line drawing
Line drawing
See also Line drawing font
character
graphics character *See herein* IBM graphics character
non-graphics character, selecting 183, 257
substitution *See herein* Format Border command method; line draw feature
font *See* Line drawing font
Format Border command method
box adjustments 218-219, 256
compared with line draw feature 256-257
font *See* Line drawing font
line spacing adjustment 218
pipe character (|) 218, 266
vertical bar/underline substitution 217-218, 256, 268
IBM graphics character
defined 255, 263
LinedrawFlag 217-218
paragraph shading 13, 217, 218
printer listing information 13, 257
troubleshooting 183, 256-257
LaserJet printer 80
line draw feature method
character substitution 217
compared with Format Border command method 256-257
font *See* Line drawing font
Hyphen/Bar set 257
PCSD bytes 232
troubleshooting 183, 256-257
Line drawing font
See also Line drawing
Format Border command method
automatic font assignment 13, 218, 256
bold character format 196, 206
Line drawing font *(continued)*
Format Border command method *(continued)*
changing font, MergePRD program 196, 204, 206, 266
PostScript printer restriction 204, 206
printer listing information 13
LaserJet printer font 80
line draw feature method
character formatting 257
font assignment 13, 218, 257
printer listing information 13 257
troubleshooting 183, 256-257
Linedraw character field
See also Line drawing; Line drawing font
selecting non-graphics character 183, 257
Line feed
See also Paper feed
automatic line feed switch 5
Graphics Device Description 239
interlacing 239-240
MSPRINT file format 259
PCSD bytes 230-231
reverse line feed 217
Line spacing
defined 266
font size auto line spacing 181, 226, 266
IBM Wheel Printer 251
leading defined 265
line drawing adjustments 218
PCSD bytes 230-231
Line style
Graphics Device Description 238, 243
line drawing *See* Line drawing; Line drawing font
Lotus PIC file 238
LPT port connections *See* Parallel port

Macro
character_test.mac 174, 257
special character storage 175
MakePRD program
See also PRD text file
control code use 212, 213-214
defined vii, 210, 266
downloadable font support 189, 249
flags *See* Flags, PRD text file
graphics support
Graphics Device Description 212, 235-241

MakePRD program *(continued)*
graphics support *(continued)*
Graphics Device Procedures 212, 213, 237
IBM Wheel Printer line spacing modification 251
mapping character *See* Mapping
modifying PRD file 210-211, 249-251
MSPRINT file format 259
PRD text file *See* PRD text file
running program 211-212
saving PRD file 211, 254
troubleshooting 253-254
twip *See* Twip
using unsupported printers 10, 210
Mannesmann Tally printers
1x model 19, 107-108
80 model 19, 108-109
330 model 109-110
910 model 19, 110-112
Manual paper feed
See also Bin feed/Sheet feeder; Continuous paper feed; Envelope feed; Paper feed
BinsSupported flag 221-222
defined 266
adding support, MergePRD program 203
PCSD bytes 232
selecting 7, 264
Manual, Printer Information for Microsoft Word
described vii
printer support updated in PRINTERS.DOC file 10, 12
terms defined 263-268
Mapping
ASCII code reserved for Word 178, 256
printer characters to screen display 227-229
special character 175, 227-229, 249-251
Margin
justified margins *See* Microspace justification
landscape orientation 175-176
paper alignment 7, 177, 185
previewing printed document 8, 177
unprintable regions *See* Unprintable region
Mathematical graphics *See* Vector graphics
Mathematical symbol *See* Special character
Memory, printer
defined 267
Memory, printer *(continued)*
downloadable font restrictions 79, 183, 191, 267
floppy disk use 189
graphics restriction 14, 182, 184, 263, 267
insufficient memory message 193
LaserJet printer 79, 193
PostScript printer 191
running out, troubleshooting 184
temporary font advantage 192
MergePRD program
changing LaserJet character set 197, 199, 204-205, 206
changing line drawing font 196, 204, 206, 266
combining fonts 79, 196, 199-200, 266
defined vii, 196, 266
deleting fonts/font sizes 79, 196, 200, 202, 206
file organization 198
Main Menu described 199, 205-206
PostScript downloadable font 130, 191, 200-201, 206, 266
PRD file flag restrictions 207
quitting MergePRD 200, 206
saving PRD file 206
Select Fonts and Font Sizes menu described 199-200, 206
sheet feeder 196, 203, 205, 266
starting MergePRD program 198-199
updating PRD file from previous Word version 196, 202-203, 210
use restrictions 197
use suggestions 196-197
Message
DAT file not found... 193
Download file not found... 193
Downloading fonts... 193
Encounter too long a string 254
Font download unsuccessful 193
Formatting... 181
Insufficient memory 193
Printer is not ready 180-181
Text file wrong format 254
Microsoft Forum *See* CompuServe Microsoft Forum
Microsoft Print *See* MSPRINT file format
Microsoft Product Support
See also Troubleshooting
Graphics Device Procedures kit 213, 237

Microsoft Product Support *(continued)*
phone number 10, 184
Supplemental Printer Disks source 12, 268
Microsoft RoundTable *See* GEnie Microsoft RoundTable
Microsoft Windows 193
Microsoft Word version 5.0
generic fonts *See* Generic font name
storing with downloadable font 189
updating PRD file from previous version 196, 202-203, 210
using with printers
displayed/printed text 8-9
overview 2-3
preparing to print 3-5
printing 6-7
unsupported printers 10
Microspace justification
bidirectional printing troubleshooting 185
defined 266
draft mode restrictions 6, 9
justified text defined 265
Microspace flag 207, 215, 227
printer listing information 14
MKDIR command 189
Mode *See* Graphics mode; MODE command; Print mode; Text mode
MODE command
font downloading, troubleshooting 193
printing problems, troubleshooting 179, 181, 182, 183
serial connection requirement 6, 268
setting handshaking 3, 5, 265
Model Block, PRD text file 212, 216-222
Model Information, printer listing 12-13
Modifying PRD file *See* MergePRD program; MakePRD program
Monospaced font *See* Fixed-pitch font
MSPRINT file format
See also Generic (TTY) PRD file
defined 266
PCSD bytes 232
PrinterType flag 214
SpecialFlags flag 215
Supplemental Printer Disks 19
using vii, 259-260

Naming file *See* File
Narrow character *See* Compressed mode
NCR-6416 Laser Printer 19, 113
Near letter quality (NLQ)
defined 266
Font Assignment Table 251
selecting 2, 16, 186, 266
NEC printers
LC860+ model 114-115
P6/P7 and P5 XL/P9 XL models 116
P560/P565 models 117
Pinwriter P2/P3 models 19, 118
Pinwriter P2200 model 119
Silentwriter 890 model 119
Spinwriter 3550 model 19, 120
Spinwriter 7710 model 19, 121
NLQ *See* Near-letter-quality (NLQ)
Non-proportional font *See* Fixed-pitch font
NORMAL.STY style sheet 185
Null modem cable 4

Octal code 213-214, 229
Okidata printers
192 model 122-123
292/293 models 123-124
Laserline 6/8 models 124-125
Microline 92/93 models 125
Microline 393/393C models 126
Pacemark 2410 model 19, 127
On Line indicator 179
Operating system *See* DOS operating system; OS/2 operating system
Options command
See also Print Options command; Transfer Options command
linedraw character field, selecting 183
show layout/line breaks 8
Orientation
horizontal dimension greater than vertical *See* Landscape orientation
landscape *See* Landscape orientation
OrientationFlag 219
PCSD bytes 232
portrait *See* Portrait orientation
rotating *See* Autorotation
Orphan
See also Widow
orphan/widow control, selecting 7
defined 266

OS/2 operating system
See also DOS operating system
DIR command 189
DOS compatibility mode 5, 179, 198
MKDIR command 189
MODE command *See* MODE command

Page
See also Paper
description language 266
double-sided *See* Duplex printing
graphics printing parameters 237
layout, previewing 8, 177
range, printing 6-7, 180
Page break
See also Line break
draft mode 6
orphaned/widowed line 7, 266, 268
troubleshooting 182
Page description language 266, 267
Page edge *See* Unprintable region
Panasonic printers
KX-1092i/1091i and KX-P1080i/P1592 models 127-128
KX-P1524 model 129
KX-P4450 Laser model 129-130
Paper
See also Page
alignment 7, 177, 185
desktop publishing special paper 177
edge *See* Unprintable region
feed *See* Paper feed
jamming 181
letter-sized 267
orientation *See* Orientation
printing on both sides *See* Duplex printing
weight 177
Paper feed
See also Line feed; Paper
bin feed/sheet feeder *See* Bin feed/sheet feeder
continuous *See* Continuous paper feed
envelope feed *See* Envelope feed
LaserJet printer 80
manual *See* Manual paper feed
selecting 7
troubleshooting 180, 181, 182

Paragraph
mark (character) 264
formatting Standard paragraph variant 175, 185
orphaned/widowed line 7, 266, 268
running heads format 181
shading 13, 217, 218
Parallel connection
See also Interface; Serial connection
checking connection 3-4, 179-180
defined 266
port *See* Parallel port
printing speed improvement 177
serial connection distinction 253
SerialInterface flag 215
Parallel port
See also Parallel connection; Port
defined 266, 267
directory, port listings 3, 180
selecting 6
Parity *See* Handshaking
PC-8 extended character set 80, 84
PCSD *See* Printer Control Sequence Description (PCSD)
Pen (graphics device) 237, 238
Permanent font 192
Photographic reduction 177
Pica
See also Elite
defined 2, 265, 266
Font Assignment Table 251
font size, selecting 186
PIF file 193
Pipe character (|)
See also Vertical bar/underline line drawing
defined 266
LinedrawFlag 218
Pitch
See also Fixed-pitch font; Point
10-pitch type *See* Pica
12-pitch type *See* Elite
conversion to points 2, 17, 186, 223, 267
defined 2, 263, 267
printer 10-pitch type default 2, 5
Pixel
interlacing 239-240
page parameters 237
PLAIN PRD file *See* Generic (TTY) PRD file
Plotter (graphics device) 235, 237

Point
See also Font size
10-point type *See* Elite
12-point type *See* Pica
conversion from pitch 2, 17, 186, 223, 267
defined 267
Port
See also Interface
defined 267
directory, port listings 3, 179
downloading font, troubleshooting 193
parallel *See* Parallel port
selecting 6
serial *See* Serial port
Portrait orientation
See also Autorotation; Landscape orientation; Orientation
defined 267
LaserJet font cartridges 83
mixing with landscape orientation 176, 197
OrientationFlag 219
vertical drawing capability 237
PostScript
See also PostScript font; PostScript printer
defined 266
graphics *See* Vector graphics
page description language 266, 267
PRD file *See* PostScript printer
PostScript font
See also PostScript; PostScript printer
AFM file 191, 197, 201, 206
downloadable font
See also Downloadable font
adding support, MergePRD 130, 191, 200-201, 206, 266
DAT file format specifications 262
memory restrictions 191
downloading procedure 130, 188, 191, 201
generic font family 201
PSDOWN files 130, 191, 201
scalable font 3, 234
PostScript printer
See also PostScript; PostScript font
checking port connection 3
graphics *See* Vector graphics
Graphics Device Procedures 212, 213
INI file
requirement 130, 189, 265
memory usage 191
preparing to download font 189, 201
PostScript printer *(continued)*
landscape mode printing 176
line drawing font unchangable with MergePRD 204, 206
memory restrictions 191
sheet feeder 203
PRD files 130-132, 191, 201, 212
printer listings 130-132
raster/vector device *See* Raster/vector device
SpecialFlags 215
white printing 219, 234
PRD file
See also PRD text file
backup 197, 210
changing printers 9
combining fonts 196, 199-200, 266
conversion with text format 210-212, 266
creating *See* MakePRD program
defined 2, 267
deleting font/font size 196, 200, 202, 206
file format *See* PRD text file
flags *See* Flags, PRD text file
font duplication between PRD files 200, 202
font selection, troubleshooting 7, 185
generic *See* Generic (TTY) PRD file
landscape orientation *See* Landscape orientation
merging *See* MergePRD program
modifying *See* MakePRD program; MergePRD program
multiple printer models sharing PRD file 12, 216
multiple-PRD-file printer 13
naming PRD file
MakePRD program 211
MergePRD program 200, 201
number of fonts allowed 223
portrait orientation *See* Portrait orientation
Post Script PRD files 130, 191, 201, 212
printer listing information 12, 13, 16
printing problems, troubleshooting 182-183
saving PRD file
MakePRD program 211, 254
MergePRD program 206
selecting PRD file
MakePRD program 210
Print Options command 6, 9, 182-183
Setup program 267

PRD file *(continued)*
sheet feeder support *See* Bin feed/sheet feeder
Supplemental Printer Disks *See* Supplemental Printer Disks
text format *See* PRD text file
TTY.PRD *See* Generic (TTY) PRD files
unsupported printers 10, 12
updating from previous Word version 196, 202-203, 210
PRD text file
See also MakePRD program; PRD file
Character Translation Table (CTT) section 212, 227-228
Character Width Table (CWT) 212, 213, 226-227, 249
conversion with binary PRD file format 210-212, 254, 266
defined 210, 266
entering control codes 210, 213-214, 254
file format sections described 212-213
flags *See* Flags, PRD text file
Font Assignment Table 251-253
Font Description section 212, 222-226
Graphics Device Description section 212, 235-241
Graphics Device Procedures section 212, 213
Header section 212, 214-215
IBM Wheel Printer line spacing 251
mapping character *See* Mapping
Model Block section 212, 216-222
Printer Control Sequence Description (PCSD) section 212, 213, 229-234
sample PRD text file 244-248
saving 211, 254
serial/parallel connection distinction 253
Strings section 212, 241-244
Text file wrong format message 254
Previewing printed document 8, 177
Print File command 259
Print head
defined 267
Format Border box restriction 219
Graphics Device Description 239
movement parameters 214, 215
paper alignment 7, 177
Print Merge command 181
Print mode
compressed *See* Compressed mode
correspondence quality (C) 16
default *See* Draft mode
draft *See* Draft mode
expanded *See* Expanded mode
font name suffixes 16
letter quality (LQ) 2, 16, 264
mode control panels/switches 5
near letter quality (NLQ) *See* Near letter quality (NLQ)
defined 266
selecting 2, 16, 186, 264, 266
Print Options command
See also Options command; Transfer Options command
changing printers 9
color printing 186
downloading font
default directory 189
procedure 190
troubleshooting 193
draft mode restrictions 9, 184, 185, 186
fields described 6-7
landscape orientation printing 176
MSPRINT file format 259
paper feed 7, 263, 264
printer listing model information 12
printing problems, troubleshooting 180, 181, 182, 184
protocol setting 215
resolution 238
serial/parallel connection distinction 253
sheet feeder control codes 231
testing new PRD file 211
Print preView feature 8, 177
Print Printer command
ASCII codes 255
changing printers 9
downloading procedure 190
paper alignment 7
Print quality, improving
interlacing 239-240
laser printer 177
Print wheel
See also Daisywheel printer
defined 267
draft mode disables change prompt 9, 186
italic font usage 14, 264

Printer
See also Printing
buffer *See* Memory, printer
cable *See* Interface
changing printers 9
color *See* Color printing
commands *See* Control code; Escape code
communication with computer *See* Handshaking; Protocol
connection with computer *See* Interface
control panel *See* Control panel
daisywheel *See* Daisywheel printer
default settings 2, 5
dip switch *See* Dip switch
dot matrix *See* Dot matrix printer
downloading font *See* Downloadable font; Downloading
driver *See* PRD file
duplex printing *See* Duplex printing
emulation 10, 210
features chart explained 14
graphics device *See* Graphics
interface *See* Interface
laser printer *See* Laser printer
line feed *See* Line feed
listings for supported printers explained 12-16
memory *See* Memory, printer
model
color *See* Color printing
Model Block, PRD text file 212, 216-222
ModelName flag 222
printer listing information explained 12-16
selecting 6, 9
multiple-PRD-files printer 13
multiple printers
changing printers 9
sharing PRD file 12, 216
switchbox access 180
On Line indicator 179
paper feed *See* Paper feed
parallel *See* Parallel connection
PostScript *See* PostScript printer
print head *See* Print head
print wheel *See* Print wheel
PrinterType flag 207, 214
queuing documents 7

Printer *(continued)*
resetting
clears temporary font 192
escape code 264
PCSD bytes 230
self test *See character_test.mac*
selecting PRD file
MakePRD program 210
Print Options command 6, 9, 182-183
Setup program 267
serial *See* Serial connection
supported printer
See also PRD file; Unsupported printer
adding support *See* MakePRD program; MergePRD program
additional PRD files *See* Supplemental Printer Disks
printer listings explained 12-16
updated listings in PRINTERS.DOC file 10, 12
switchbox 180
teletype-like printer 10
troubleshooting *See* Troubleshooting
unsupported *See* Unsupported printer
Printer Control Sequence Description (PCSD) 212, 229-234
Printer driver file *See* PRD file
Printer Features chart, printer listings 14
Printer Information for Microsoft Word manual *See* Manual, Printer Information for Microsoft Word
Printer is not ready message 180
Printer Sequence Description (PSD)
described 223-224
downloadable font support 249
PRINTERS.DOC file 10, 12
Printing
See also Printer
available font/font size list 205
bidirectional printing
PCSD bytes 234
troubleshooting 185
both sides of paper *See* Duplex printing
canceling printing 193
character *See* Character
color *See* Color printing
copies, selecting number of 6
duplex printing *See* Duplex printing
em dash character 175
graphics *See* Graphics

Printing *(continued)*
hidden text 6, 181
initialization file *See* INI file
interlacing 239-240
landscape orientation *See* Landscape orientation
letter-quality (LQ) 2, 16, 264
mode *See* Print mode
near letter quality *See* Near letter quality (NLQ)
orientation *See* Orientation
page edge *See* Unprintable region
page range 6-7, 180
preparing to print 3-5
previewing printed document 8, 177
problems/tips *See* Troubleshooting
quality, improving
interlacing 239-240
laser printer 177
questions, common 185-186
screen display/printed text differences *See* Screen display
selected text only 6, 180
selftest *See character_test.mac* macro
special characters 174-175, 255-257
speed improvement 177
summary sheet 6
unidirectional *See* Unidirectional printing
unprintable region *See* Unprintable region
Printronix DP-9725 Color Scribe printer 24-25
Product Support *See* Microsoft Product Support
Proportional font
See also Fixed-pitch font
character set changing restriction 204, 206
character width, measuring
Wtps label 213, 224
Character Width Table (CWT) 212, 213, 226-227, 249
defined 267
doublestrike 16
font name suffixes 16
justification *See* Microspace justification
modifying PRD file restriction 249
screen display restrictions 8, 9
Proportional space doublestrike (PD) 16
Protocol
See also Handshaking 265
defined 5, 267
Protocol *(continued)*
SerialInterface flag 215
setting 5, 215
PSD *See* Printer Sequence Description (PSD)
PSDOWN files 130, 200-201
Punctuation mark 263

QMS printer
Colorgrafix model 19
KISS/KISS Plus models 132-135
PS800/800 PS II models 135
Smartwriter model 19, 135-136
Quadram Quadlaser printer 19, 136-137
Queuing documents 7
Quitting
MakePRD program 211
MergePRD program 200, 206
Qume Sprint 11 printer 19, 137-138

RAM-resident program 193
Raster device
See also Bit map graphics; Color printing; Raster/vector device; Vector device
defined 235
Graphics Device Description 235-241
string examples 242, 244
Raster/vector device
See also Color printing; PostScript printer; Raster device; Vector device
defined 236
Graphics Device Description 235-236, 237
Graphics Device Procedures 212, 237
Reduction, photographic 177
Remapping *See* Mapping
Resetting printer *See* Printer
Resolution
defined 268
desktop publishing special paper 177
dots per inch (DPI) *See* Dots per inch (DPI)
Graphics Device Description 236, 237, 238, 240
interlacing 239-240
memory usage 182, 184
photographic reduction improves 177
printer listing information 13, 14

Resolution *(continued)*
selecting
Print Options command 6, 238
Graphics Device Description 238, 240
string examples 241, 244
Reverse line feed 217
Revision marks
See also Line drawing
Format Border command line drawing 13, 196, 206, 207
Ricoh printers
LP4080R Laser model 19, 138-139
PC Laser 6000 model 139-140
Rotating fonts *See* Autorotation
Running head formatting 181

Sans serif font
See also Serif font
defined 268
Saving
available font/font size list 205
PRD file
MakePRD program 211, 254
MergePRD program 206
Scalable font 3, 234
Screen display
character format 9
font change not shown 9
font size restriction 9
hidden text 181
printed text differences 8-9
proportional font restrictions 8, 9
special character 174, 227-228, 249, 255-256
Seikosha printers
BPI-5420AI model 19, 140-141
SP-1000 model 19, 141-142
Selecting
bin feed/sheet feeder 7, 263
copies, number of 6
downloadable font *See* Downloadable font
duplex printing 7
font *See* Font
font name *See* Font name
font size *See* Font size
line drawing character *See* Line drawing
line drawing font *See* Line drawing font
orphan/widow control 7
paper feed 7, 263, 264
Selecting *(continued)*
port 6
PRD file *See* PRD file
print mode 2, 16, 186, 264, 266
printer model 6, 9
resolution *See* Resolution
text selection 6-7, 180
Self test *See character_test.mac* macro
Serial connection
See also Interface; Parallel connection
baud *See* Handshaking
cable 4, 179, 268
checking connection 3- 5, 179-180
defined 268
handshaking *See* Handshaking
MODE command *See* MODE command
OS/2 compatibility mode 5, 179
parallel connection distinction 253
port *See* Serial port
printing problems, troubleshooting 183
protocol *See* Protocol
SerialInterface flag 215, 253
Serial port
See also Port; Serial connection
defined 267, 268
directory, port listings 3, 180
OS/2 compatibility mode 179
selecting 6
Serif font
See also Sans serif
defined 268
Font Assignment Table 252
Setcom40 program 5, 179
Setup program
DAT/INI/PRD files copied automatically 189, 265, 267
laser printer landscape printing 176
MergePRD program copied automatically 198
PostScript printer 201
Sheet feeder *See* Bin feed/sheet feeder
Silver Reed Exp 400 printer 19, 142-143
Small capitals 14, 268
Soft font *See* Downloadable font
Special character
See also ASCII; Character set; Extended character set
ASCII codes 255-256
character formatting 175
character_test.mac macro 174, 257

Special character *(continued)*
creating/emulating character 227-229
decorative characters 264
em dash *See* Em dash character
font restrictions 256
graphics character *See* Graphics
Legal character set 80
line drawing *See* Line drawing
mapping 175, 227-229, 249-251
memory restrictions 191
printing 174-175, 255-257
screen display 174, 227-228, 249, 255-256
storing as macro 175
Star Micronics printers
Delta model 19, 143-144
NB 24-15 model 144-145
NX-10/15 models 145-146
Radix model 19, 146-147
Strikethrough
PCSD bytes 233
printer listing information 14
String
Graphics Device Description string examples 212, 241-244
DAT file format specifications 261
Encounter too long a string message 254
Style sheet
Line draw variant 183, 218
special character formatting 175
Standard paragraph variant 175, 185
Subscript
defined 268
PCSD bytes 213, 229, 234
printer listing information 14
troubleshooting 185
Substitution
font substitution if download file not found 193
underline for italic character format 14, 265
vertical bar/underline for IBM graphics characters 217-218, 256, 268
Suffixes, font name 16
Summary sheet 6
Superscript
defined 268
PCSD bytes 213, 229, 233-234
printer listing information 14
troubleshooting 185
Supplemental Printer Disks
defined 12, 268
printer listing information 13
PRD files listed 18-19
Switch *See* Dip switch
Switchbox 180
Symbol *See* Special character
Symbol set *See* LaserJet printer

Tandy printers
DMP 106 model 19, 147-148
DMP 130 model 148-149
DMP 200 model 19, 149
DMP 400 model 19, 150
DMP 430 model 150-151
DMP 2100 model 19, 151-152
DMP 2100P model 152-153
DMP 2110/2120 models 153-154
DMP 2200 model 19, 154-155
DW II/DW IIB models 19, 155-156
DWP 220/230 models 156-157
DWP 510/520 models 157-158
LP 1000 model 158-159
Teletype-like printer 10
Temporary font 192
Texas Instruments printers
850 model 19, 159-160
855/857 models 160-161
Omnilaser 1/2108/2115 models 162
Text
color text
hidden text indicator 181
printing 219, 234
hidden text 6, 181
justification *See* Justification
printing problems, troubleshooting 182-184
screen display/printed text differences 8-9
selected text, printing 6-7, 180
Text file wrong format message 254
Text format of PRD file *See* PRD text file
Text mode 9
Timeout, protocol 215
Toshiba printers
P321SL/341SL models 162-163
P351/351C models 163-164
P351 SX/351 SXC models 164-165
P1340 model 165
P1350/P1351 models 166
PageLaser model 166-167

Transfer Glossary Load
command 174
Transfer Load command 211
Transfer Options command
See also Options command; Print Options command
form document 181
Transfer Save command 211, 254
Transparency
See also Film
printing tips 177
Troubleshooting
See also Selecting
bidirectional printing 185
character formatting 185
checking printer 179-181
common printing questions 185-186
compressed/expanded font modes 186
default font, changing 185
downloading font messages 193
draft/NLQ modes 186
font/font size, selecting 7, 182, 185
Formatting... message but not printing 181
garbled printing 182-183
graphics printing 184, 186
left margin size 185
line drawing 183, 256-257
MakePRD program 253-254
microspace justification 185
page formatted incorrectly 182
print wheel change prompt discontinues 186
printer advances few lines but doesn't print 180
Printer is not ready message 180-181
printer not printing at all 179-180
subscript 185
superscript 185
text lost in printing 183
TTY.PRD file *See* Generic (TTY) PRD file
Twip
defined 213, 268
graphics parameter 237
print head movement 214, 215
unprintable region 220
Type size *See* Font size
Type style *See* Character format
Typeface *See* Font
Typesetting
See also Desktop publishing
em dash 264
MSPRINT file format 259-260, 266

Underline
italic character format substitute 14, 265
hidden text indicator 181
PCSD bytes 213, 229, 233
printer listing information 14
vertical bar/underline *See* Vertical bar/underline line drawing
Unidirectional printing
PCSD bytes 234
troubleshooting 185
Unprintable region
See also Margin
defined 268
LaserJet printer 80
Model Block, PRD text file 216, 219-220
printer listing information 13
Unsupported printer
See also Generic (TTY) PRD file
Microsoft Product Support help restriction 212
using 10, 12
Updating PRD file from previous Word version 196, 202-203, 210

Vector device
See also Color printing; Raster/vector device; Vector graphics
defined 236
Graphics Device Description 235-236
PrinterType flag 214
Vector graphics
See also Vector device; Bit map graphics
defined 265, 268
Vertical bar/underline line drawing
See also Hyphen/Bar line drawing; Pipe character (|)
defined 268
substitution for IBM graphics characters 217-218, 256, 268
Vertical drawing capability 237

Wheel *See* Print wheel
White printing 219, 234
Wide character *See* Expanded mode
Widow
  See also Orphan
  defined 268
  widow/orphan control, selecting 7
Width of character *See* Character width
WidthTSwap flag 207, 215
Windows *See* Microsoft Windows
Word *See* Microsoft Word version 5.0

Xerox printers
  2700 Laser Printer model 19, 168-169
  4020 model 169-170
  4045 model 19, 170-172
XON/XOFF protocol
  defined 267
  printing problems, troubleshooting 183
  SerialInterface flag 215
  setting 5, 215

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0888 Part No. 04019